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MONTANA RANGELAND RESOURCE PROGRAM

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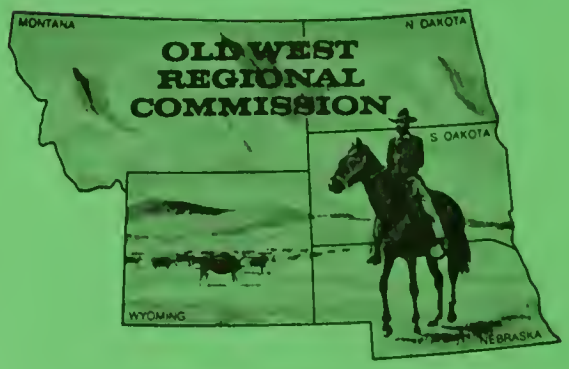

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State of Montana
Office of The Governor
Helena 59601

THOMAS L. JUDGE
GOVERNOR

June 1, 1977

THE RANGELAND RESOURCE PROGRAM AND THE RANCHERS OF THE STATE OF MONTANA

Agriculture is one of the state's largest industries, and it has always been one of our most important. Livestock and livestock products comprise a major segment, representing 49½ percent of that industry. We have within our borders 54 million acres of rangeland and 11½ million acres of grazeable woodland -- that is 70 percent of the enormous surface area of Montana. Its economic importance, its social and cultural significance, its expanse and its majesty prove that rangeland is one of Montana's chief renewable resources.

Montana State Government has taken a number of actions to protect this natural resource, and the livestock industry which depends on it. Among these is our statewide Rangeland Resource Program, which works through county range leaders to improve rangelands. A rancher in each county is designated as a range leader, and he establishes various programs concerning the range resource in his area. The Montana program is conducted entirely by volunteers, although some state funds have been appropriated by the Legislature for program administration.

In Montana, the principle of local control in the area of range management has proven itself to be the most workable approach. I will, therefore, support this program in any way that I can. I believe that the people living in their respective communities, and no one else, know what is best for them.

Sincerely,

Thomas L. Judge

THOMAS L. JUDGE
GOVERNOR OF THE STATE OF MONTANA

PRINTED ON RECYCLED PAPER

MONTANA RANGELAND RESOURCE PROGRAM

PART ONE. THE RESOURCE
PART TWO. THE PROGRAM

The State of Montana	Thomas L. Judge Governor
The Montana Department of Natural Resources and Conservation	John C. Orth Director
The Conservation Districts Division	O. M. Ueland Administrator

JUNE 1977
HELENA, MONTANA

FOREWORD

Montana is blessed with vast areas of rangeland. This resource must be properly managed so that the land will abound with herds of livestock and plentiful wildlife. Proper range management and improvement of low-producing range can be effected through cooperation, the application of technical knowledge, and common sense.

When Montana was settled, the rangelands were considered of little economic value because it was not possible to crop or log them for a profit. The rangeland was indiscriminately loaded with livestock and, in many instances, badly abused by overgrazing, plowing, and general disregard for the natural range resources. Little or no consideration was given to planning for future management needs.

In recent years many individuals, with the help of universities and agencies, have been rebuilding these lands, but there is still much to be done. The Montana Rangeland Resource Program is a state-level effort legislatively assigned to the Department of Natural Resources and Conservation to coordinate the various activities intended to maintain and enhance the rangeland resources of the state. The Department is fully aware of the beneficial effect such a program may have, if properly utilized, and if recommended developments are eventually incorporated on the land.

The Department of Natural Resources and Conservation commends the Hill County Conservation District Supervisors, whose foresight and deep concern about this vital resource matter led to creation of the Rangeland Resource Program. Special acknowledgment is given to the State Rural Area Development Committee for its efforts in emphasizing the need for a state range program. Thanks are expressed to Peter V. Jackson, who was chairman of the committee that drafted the original Montana Rangeland Resource Program. The valuable assistance given by Bob Ross, State Range Conservationist of the Soil Conservation Service, in helping draft the original Montana Rangeland Resource Program, is sincerely appreciated. Still other groups and individuals, too numerous to list, gave freely of their time and efforts; each played an equal role in making an important contribution to establishing the Montana Rangeland Resource Program. Finally, special recognition is extended to Dennis Nathe, a legislator-rancher who in 1977 introduced and successfully sponsored H.B. 484, the Montana Rangeland Resources Act, in the 45th Legislative session.

The Department would also like to thank the Department personnel who assisted in preparing this report and the Soil Conservation Service for maps and photos used throughout.

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INTRODUCTION

In recent years, when the last frontiers were gone and we awoke to the realization that there is a limit to the supply of land, we began to show more concern for the resource that in one form or another produces most of our food and fiber. The opportunity to open new areas for livestock grazing no longer exists, and, as a result, we must restore and improve the rangelands we now have.

Application of Montana's Rangeland Resource Program has been a "first." Never before has general, broad area planning of the rangeland ecosystem been attempted on such a large scale.

Many western rangeland states are now instituting programs patterned after the Montana plan. In addition, the Old West Regional Rangeland Program has been funded to assist in coordinating rangeland improvement activities in the states of Nebraska, North Dakota, South Dakota, Wyoming, and Montana.

Recognition of the unique character of rangelands as an indispensable segment of the national economy was long overdue, and our nation could no longer overlook this important resource. It is imperative that our rangeland be constantly improved and maintained through proper management, as a part of the national heritage.

PART ONE
THE RESOURCE

OVERVIEW

History tells us that Montana was once a near paradise. Native birds and animals abounded, grass was lush, and water was clean. It was self-sufficient, supporting its inhabitants with nature in balance.

Then the white man came, and the natural environment changed rapidly. As this frontier was tamed, lands were sometimes abused or put to inappropriate uses. Wildlife decreased in both numbers and variety. Problems like soil erosion were often overlooked, and maintaining natural beauty was not always of interest to early settlers.

During the last few years, these conditions are beginning to be reversed. Improvement of the quality and the productivity of Montana's environment has started to take place.

SELECTED NATURAL FEATURES

Maintaining or improving rangeland cannot be accomplished using one simple formula, for Montana is a large state affected by a variety of natural conditions.

Elevations, for example, range from 1,800 feet above sea level (where the Kootenai River flows into Idaho) to the 12,800-foot heights of Granite Peak. Topographic regions of Montana are shown on the "Geographical Areas" map following page 6 .

The western portion of the state is favored with a semi-Pacific or semi-Maritime climate, while in the eastern region the climate is considered continental, with cold winters. The mean annual temperature is 42° Fahrenheit. Growing seasons in the state vary from 39 days in some mountain areas to 150 days in the plains. The temperate nature of Montana's climate adapts it very well to livestock production. (U.S. Department of Commerce 1976).

Although not shown on the "Average Annual Precipitation Zones" map following page 6 , Montana's precipitation ranges from just over six inches in the southcentral part of the state to nearly 120 inches in the northwest. Most of Montana receives between 10 and 19 inches of precipitation. Much of the state is semi-arid, but the average amount of precipitation received each year is less important than the fact that there are years of drought and years of surplus moisture.

Over forty-three million acre-feet of water flow from Montana during an average year (Montana Department of Natural Resources and Conservation 1976). However, the water resource is not uniformly distributed geographically, and much of the flow comes during spring runoff. Farm and stockwater ponds are necessary for an adequate year-round supply in many areas.

In summary, Montana is a land of extremes, experiencing heat and cold, dry and wet, windy and calm. The soils, vegetative cover, erosion, and sediment production on the rangelands throughout the state are directly affected by these extremes.

LANDS THROUGHOUT MONTANA

Montana encompasses slightly over 94 million total acres. Most of this is land area, although about one million acres are occupied by surface waters.

Ownership

In Montana there is a general intermingling of public and private lands. Many ranch operations are very dependent on public lands to balance their range management plans. Consequently, a coordinated effort by various landowners is required to maintain and improve accepted range management practices.

The 1976 assessment made by the Montana Department of Revenue for tax purposes indicates that just over 51 million acres are privately owned. The remaining acreage is publicly-owned, non-taxable land, but much of it is held under grazing leases or permits by individuals.

The following table gives an interesting breakdown of the ownership of Montana lands.

TABLE 1

LAND OWNERSHIP IN MONTANA

Owner	Acres
Private	51,075,127
Indian (Trust & Allotted)	5,284,806
Public	
State	
Grant Lands*	5,130,623
Department of Fish and Game	190,685
Federal	
Bureau of Land Management	8,146,498
U.S. Forest Service	16,744,344
U.S. Bureau of Reclamation	287,017
National Park Service	1,013,598
U.S. Fish & Wildlife Service	937,166
U.S. Army Corps of Engineers	47,164
Total Public	37,781,901

*State grant lands are administered by the Department of State Lands and the Department of Natural Resources and Conservation.

Source: Compiled from various sources

Use

Land use throughout Montana is shown on the "Land Use" map following page 6. The use of private lands is reported in table 2, while a more detailed inventory of range and grazeable woodland, both public and private, is among the data included in table 3.

TABLE 2

USE OF PRIVATE LANDS -- 1976

Use	Acres
Irrigated Cropland	1,370,765
Dry Cropland	11,601,771
Subtotal--Cropland	12,972,536
Range, Pasture, and Woodland	37,210,260
Wild Hay	892,331
Subtotal	38,102,591
Total--Private Land	51,075,127

Source: Montana Department of Revenue 1977

TABLE 3

MONTANA

RANGELAND AND GRAZEABLE WOODLAND INVENTORY -- 1975

County	Total Land Area (Acres)	Private* Range and Grazeable Woodland (Acres)	Federal** Range and Grazeable Woodland (Acres)	Total Range and Grazeable Woodland (Acres)	Livestock and Livestock Products Sold in 1974 (Dollars)
BEAVERHEAD	3,549,870	1,163,877	1,575,025	2,738,902	19,376,500
BIG HORN	3,217,626	2,766,633	32,062	2,798,695	15,925,900
BLAINE	2,730,880	1,811,813	460,344	2,272,157	13,437,000
BROADWATER	766,720	356,302	157,374	513,676	5,585,800
CARBON	1,324,800	581,668	250,000	813,668	8,739,500
CARTER	2,120,320	1,325,035	602,279	1,927,314	10,400,200
CASCADE	1,701,760	927,764	171,915	1,099,679	12,981,100
CHOTEAU	2,508,800	1,178,625	145,919	1,324,544	7,708,000
CUSTER	2,409,600	1,913,635	344,689	2,258,324	11,365,800
DANIELS	923,520	352,896	358	353,254	3,312,300
DAWSON	1,509,120	984,402	67,968	1,052,370	6,735,200
DEER LODGE	472,320	200,422	35,508	235,930	888,100
FALLON	1,045,120	651,935	122,621	744,556	5,849,300

TABLE 3 (Continued)

County	Total Land Area (Acres)	Private* Range and Grazeable Woodland (Acres)	Federal** Range and Grazeable Woodland (Acres)	Total Range and Grazeable Woodland (Acres)	Livestock and Livestock Products Sold in 1974 (Dollars)
FERGUS	2,716,160	1,546,813	454,898	2,001,711	15,965,400
FLATHEAD	3,289,600	206,994	336,502	543,496	7,659,600
GALLATIN	1,610,880	460,021	250,000	710,021	14,989,400
GARFIELD	2,940,800	2,060,983	670,929	2,731,912	10,666,200
GLACIER	1,903,360	1,060,118	24,592	1,084,710	5,917,400
GOLDEN VALLEY	753,920	616,693	30,000	646,693	3,286,500
GRANITE	1,109,120	293,291	217,050	510,341	3,206,400
HILL	1,872,640	679,683	38,441	718,124	5,593,200
JEFFERSON	1,056,640	368,846	350,000	718,846	2,591,600
JUDITH BASIN	1,203,200	557,822	250,000	807,822	9,490,500
LAKE	960,000	392,082	70,00	462,082	12,074,200
LEWIS & CLARK	2,218,240	908,190	580,108	1,488,298	6,368,400
LIBERTY	920,960	335,554	22,747	358,301	2,613,500
LINCOLN	2,377,600	329,630	169,716	499,346	1,036,700
MADISON	2,259,200	923,156	911,943	1,835,099	8,482,500

TABLE 3 (Continued)

County	Total Land Area (Acres)	Private* Range and Grazeable Woodland (Acres)	Federal** Range and Grazeable Woodland (Acres)	Total Range and Grazeable Woodland (Acres)	Livestock and Livestock Products Sold in 1974 (Dollars)
MC CONE	1,660,160	843,676	246,466	1,090,142	6,439,600
MEAGHER	1,506,560	906,719	250,000	1,156,719	6,936,400
MINERAL	782,720	58,408	75,910	134,318	242,200
MISSOULA	1,672,320	429,715	136,196	565,911	2,612,700
MUSSELSHELL	1,207,040	971,657	117,930	1,089,587	3,917,200
PARK	1,681,280	518,329	300,000	818,329	6,781,000
PETROLEUM	1,056,000	637,087	358,294	995,321	4,210,200
PHILLIPS	3,345,920	1,703,867	1,165,566	2,869,433	11,263,900
PONDERA	1,051,520	339,397	91,729	431,126	5,769,300
POWDER RIVER	2,102,400	1,274,201	604,101	1,878,302	9,353,600
POWELL	1,495,680	598,421	185,408	783,329	6,786,100
PRAIRIE	1,105,280	511,826	450,078	961,904	6,519,700
RAVALLI	1,525,760	190,173	62,160	252,333	9,587,700
RICHLAND	1,321,600	731,052	53,262	784,314	7,831,200
ROOSEVELT	1,526,400	731,647	5,626	737,273	6,292,200

TABLE 3 (Continued)

County	Total Land Area (Acres)	Private* Range and Grazeable Woodland (Acres)	Federal** Range and Grazeable Woodland (Acres)	Total Range and Grazeable Woodland (Acres)	Livestock and Livestock Products Sold in 1974 (Dollars)
ROSEBUD	3,220,480	2,697,605	377,995	3,035,600	12,186,700
SANDERS	1,791,360	583,923	500,000	1,083,923	3,084,600
SHERIDAN	1,087,907	368,722	21,401	390,123	4,207,400
SILVERBOW	458,240	175,371	138,204	313,575	500,900
STILLWATER	1,150,080	667,257	90,000	757,257	10,039,100
SWEETGRASS	1,181,440	714,242	150,000	864,242	6,834,300
TETON	1,468,160	550,437	164,697	715,134	9,089,500
TOOLE	1,248,000	513,230	37,290	550,520	4,119,000
TREASURE	629,760	561,892	11,694	573,586	4,343,300
VALLEY	3,175,040	1,303,735	1,094,886	2,398,621	8,715,700
WHEATLAND	910,080	726,193	50,000	776,193	5,866,500
WIBAUX	568,960	350,423	26,398	376,821	3,531,600
YELLOWSTONE	1,686,400	1,180,390	82,230	1,262,620	21,417,200
TOTAL	93,089,323	45,767,478	15,150,509	60,917,987	420,680,000

*U.S. Department of Agriculture, Soil Conservation Service 1970a.
**Based on woodland resource inventories and broad estimates.
Source: Montana Department of Agriculture and U.S. Department of Agriculture, Statistical Reporting Service 1976

AGRICULTURE IN MONTANA

As noted in the last table, livestock and livestock products bring a substantial annual income. In fact, they bring almost one-half the income of the agricultural industry, which is one of the major industries in Montana.

In 1976, Montana had 22,500 farms with an average size of 2,773 acres (Montana Department of Agriculture and U.S. Department of Agriculture, Statistical Reporting Service 1976). Additional statistics concerning Montana agriculture are presented in the following table.

TABLE 4

MONTANA AGRICULTURE

Agricultural Feature	Rank in the Nation
Area (including leased land) in Farms and Ranches (62,400,000 acres)	1
Income from Livestock ($420,680,000)	32
All Cattle and Calves (3,150,000 Head)	14
Beef Cows (1,614,000 Head)	8
All Sheep and Lambs (635,000 Head)	6

Source: Montana Department of Agriculture and U.S. Department of Agriculture, Statistical Reporting Service 1976.

RANGELAND

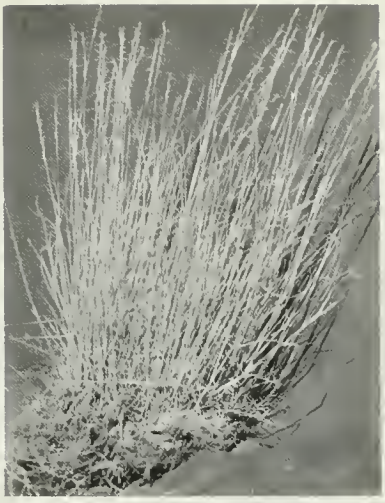
Montana is primarily a rangeland state; approximately 58% percent of the land area is grassland, and 12% is grazeable woodland (U.S. Department of Agriculture, Soil Conservation Service 1970a).

Blue Bunch Wheat Grass

Blue bunch wheat grass produces a large volume of palatable and nutritious forage and is found in all areas of the state. One of the most desirable native range plants, it was designated as the state grass by the 1973 Legislature (Section 19-124, R.C.M. 1947).

Value of Shrubs and Trees

Shrubs and trees are an integral part of the range resource. Where they do not exist naturally, operators should consider the value of establishing them. Woody materials (1) provide shade, protection, and winter food for livestock, (2) provide food and cover for wildlife, (3) enhance the beauty of the area, (4) are an essential part of most recreation areas, and (5) provide additional erosion control, with a resulting reduction of silt pollution of streams.



Uses and Demands

The population of our state has risen steadily, and today increasing demands are made on every acre of land. This has created a need for broad area resource planning, particularly by individual land managers.

To more ably describe the situation, this section lists and briefly explains the demands and responsibilities of the rangelands today.

Livestock

The largest single demand on Montana's rangelands today is production of forage for domestic livestock. Nearly 90 percent of the grazing for livestock is produced on privately-owned lands.

Costs of operation have risen dramatically in the past decade, and inflation has seriously eroded the livestock industry. In addition, while demand for livestock products remains high, lowered purchasing power has created a surplus market. Statistics indicate that, as of January 1, 1977, livestock numbers were starting a downward trend which would indicate that a more favorable economic situation can be expected in the not-too-distant future (Montana Department of Agriculture and U.S. Department of Agriculture, Statistical Reporting Service 1976).

However, the rangelands may now be called on to combat another serious threat in the form of drought. For several years, most of the state has experienced above normal moisture conditions. This has encouraged some increase in stocking rates, and in some areas it has led to conversion of rangeland to cropland. Generally, the rangelands have withstood these pressures very well, and on the average the condition of the vegetation has improved somewhat. Well managed range in good condition will be able to withstand overuse during drought much better than range in only poor or fair condition.

Grasshoppers and other insects are presenting problems in some areas, and their control may have to be included in grazing management plans.

It must be stressed that the condition of the rangelands must be improved and managed to ensure a stable and economically sound base for the future of the livestock industry.

Wildlife Habitat

Montana has long been famous for its wildlife. Early history reports the plains and mountains abounding with elk, antelope, buffalo, and deer; the streams had large numbers of waterfowl, beaver, and fish.

The number and species have fluctuated greatly since the settling of Montana. Although the pioneers, homesteaders, and miners for many years lived off game or supplemented their diet with wild meat, the greatest impact on wildlife was not hunting, but the alteration, or, in some cases, the destruction of wildlife habitat.

During the first part of this century, their numbers decreased until nearly every kind of animal was in short supply. This situation alarmed many people, and laws were written for their protection. Since that time, hunting laws, protected areas, parks, and actions of concerned ranchers have aided wildlife to return and increase in numbers.

Rangelands, when they are in top condition, support a variety of wildlife. Sixty-five percent of the feed for wildlife is produced on privately-owned rangeland.

This demand is an important one. As the human population increases, there appears to be greater interest in and desire for more wildlife. Our expanded knowledge of ecology indicates that a healthy and balanced environment, capable of supporting wildlife, is the key to the survival of man.

The need for wildlife will probably continue to grow for years to come. If this demand, coupled with others, is to be met, rangeland conditions must be improved at an accelerated rate to protect this resource.

Water Production and Control

Montana is a major upstream producer of fresh water. The vast acreage of rangeland is tremendously important for water production, but this function has in the past been given too little attention as a responsibility of the rangelands.

A dependable flow of water received from rangelands depends upon a protective cover of vegetation. This requirement does not restrict the harvest of grass, but it does mean that good grass condition must be maintained at all times. Under these conditions runoff is controlled, subsoil water storage is increased, and streamflow is maintained on a year-round basis. Thus, a more dependable supply of water is assured.

Today, increased numbers of people are demanding water in unprecedented quantities. These demands will continue to expand, and rangelands will be expected to produce the maximum amount of good, clean water. Good vegetation management planning will help assure reaching this goal.

Soil Erosion Control

The problems arising from soil erosion were ignored in the process of settling our nation. However, erosion is recognized today as a danger to the health and prosperity of our country.

Agriculture is a major contributor to both wind and water erosion, but this need not be true for rangeland. A good vegetative cover will minimize erosion by both wind and water, even in times of drought, flood, or natural spring runoff. Range in poor condition, however, will suffer from wind and water erosion processes.

The passage of the Federal Water Pollution Control Act (P.L. 92-500) was the beginning of a federal program to protect the quality of water. Studies are being made in designated counties under Section 208 of this law to determine soil losses from erosion and nonpoint sources of pollution. The Montana Streambed and Land Preservation Act is also being enforced to prevent damage to banks or beds of perennial streams. (A list of laws relevant to rangeland is included as Appendix A.)

Properly managed range will help minimize violations of these protective statutes, maximize productivity, and ensure environmental quality. All those involved in rangeland management should, in their long range plans and guidelines, stress the need for measures to prevent water and wind erosion of rangelands.

Recreation

The need for recreation has grown with the rapidly expanding population. Also, people have more time to enjoy themselves today than ever before. This creates a demand on rangeland, in addition to the production of food and fiber, for the rangelands are being increasingly looked to as areas where recreational activities can be enjoyed.

The range and grasslands offer a variety of recreational uses as diverse as the imaginations of the people of Montana and the nation. The primary uses are hunting and fishing, followed by camping, which are forms of recreation dating from the pioneer necessity to provide food. In 1975, two and one-half million mandays of hunting were enjoyed by sportsmen in the state, and much of this took place on rangeland (Montana Department of Fish and Game 1976). Today people have slowly but steadily shown interest in many other forms of pleasure that can be gained from the grasslands, such as photography and bird and animal watching. Other interesting recreational values include scenic beauty, artifacts, historical sites, gems, cross-country skiing, snowmobiling, hiking, back packing, etc. Rangelands also provide vast open spaces for quiet and solitude.

Montana's rangelands, handled and cared for in a prudent manner with due respect for their fragile condition, can meet the increased demands that recreation will place upon them.

Natural Beauty

Properly managed rangelands are a beautiful sight to behold. The early explorers and pioneers wrote in their diaries of the wondrous, waving seas of grass spotted with patches of shrubs and trees.

People today are demanding attractive settings for their homes, businesses, and recreational areas. Natural beauty, or aesthetics, ranks high in the list of environmental values.

The responsibility for natural beauty on rangelands can be fulfilled by maintaining a cover of vegetation that will enhance rural homes, communities, and recreational areas. Well maintained grasslands provide a beautiful backdrop for everyone--both urban and rural.

Future Urban, Second Home, and Industrial Areas

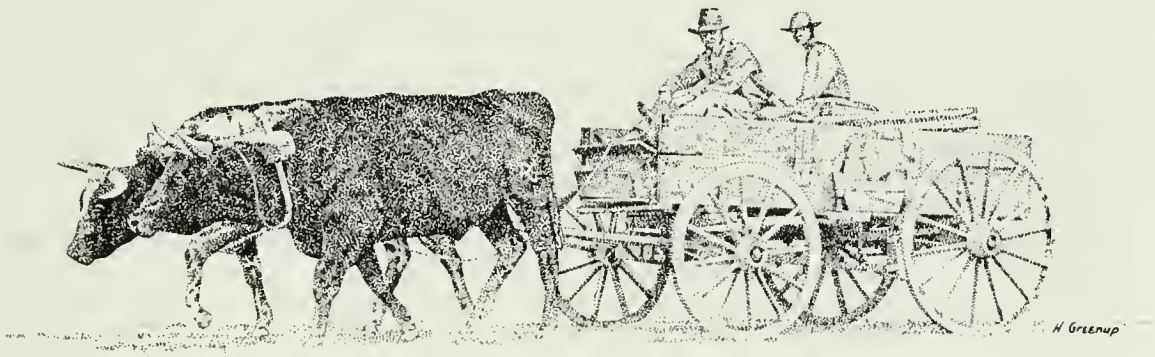
The increasing demands for housing are rapidly taking many acres out of production. Some lands are not well suited for production of food and fiber, but many acres of prime crop and grazing lands are being used for urban expansion and subdivision.

The impact of this demand is serious, not only because of lost production, but also because the urban expansion often occurs in fragile areas such as creek bottoms and mountain meadows. The attending construction, access roads, water supply and sewage facilities, and traffic have a decidedly important effect on both the environment and on ranch operations.

This type of use is difficult to control, but very definitely it increases the normal use and pressure on remaining lands. Intensive management practices, zoning laws, and subdivision regulations are logical and necessary methods for meeting this situation.

Transportation

The development of the rural agricultural region of Montana is contingent upon the network of federal, state, and county highways and roads. An increasingly large percentage of livestock is moved to market, to different grazing areas, or to feedlots by truck.



Many of these roads were located along rivers and streams for economic feasibility of construction, and consequently were often built on prime agricultural and grazing lands. This trend still continues to some degree.

In addition to taking prime lands out of production, highways are a major source of weed infestation. The spread of many noxious weeds which are seriously affecting many acres of rangeland is probably attributable to vehicular traffic on highways. Efforts are being made to control this problem.

The following table lists the estimated acreage taken for highways to 1976.

TABLE 5

LAND USED FOR TRANSPORTATION

Road Type	Miles	Average Take Per Mile (Acres)	Land Taken (Acres)
Interstate	1,193	35	41,755
Primary	5,455	16	87,280
Secondary	4,641	10	46,410
Local & Off-system	66,259	8.5	563,201
		Total Acreage	738,646

Source: Montana Department of Highways 1977

Education, Science

The education of people concerned with range resources is necessary to guarantee proper management and use. Part of this existing education process is having examples of good range vegetation available for study.

Many ranchers throughout the state have excellent examples of good range practices applied on their privately-owned lands. These examples are often used on range tours to demonstrate to ranchers, businessmen, and others the benefits of good range management.

The science of range management requires a vast amount of information to be used by range scientists in research, education, and the application of their work to the resource. The importance attached to range improvement is evidenced by increased enrollment in range management studies in the universities. Extensive research is being carried on by research institutions, agricultural experiment stations, and the universities. Technical agencies are working closely together to disseminate new methods and techniques of range management practices. Lending agencies are showing increased interest in range problems by sponsoring range schools and adding agricultural representatives to their staffs. Management planning, range condition, production figures, and market weights are replacing stock numbers as major factors in rangeland resource management. Scientific range management is becoming recognized as a factor necessary for a stable livestock industry.

Natural areas are a scientific tool useful for the following purposes:

1. To provide representative examples of natural ecosystems,

2. To provide opportunities for study of plant succession and other biological and physical phenomena over long periods of time,

3. To provide "benchmark" values for monitoring changes in natural processes and systems brought about by man's activities,

4. To serve as "gene pools" for long-term maintenance of genetic diversity, and

5. To serve as preserves for rare and endangered species (Flath 1975).

Natural areas are part of the programs of professional associations, private organizations, federal agencies, and state agencies, although none have been created under Montana state law. One federal agency has identified 45 "near-pristine" range sites in Montana (U.S. Department of Agriculture, Soil Conservation Service 1973). The following are among the managed natural areas in Montana which are used for the educational purposes of studying and documenting range production, species composition, and ecological changes (Soil Conservation Society of America 1977).

1. Crooked Falls Managed Natural Area
   Owner: Montana Power Company

Lessee: Cascade Conservation District
100 acres, six miles northeast of Great Falls, Montana, and

2. Kirk Hill Tract
Owner: Montana State University
40 acres, six miles south of Bozeman, Montana.

Condition

History

Historically, much of the rangeland was overgrazed or mismanaged.

At the turn of the century and until the end of the homestead period, many acres were seriously abused--first by herds of southern cattle, followed by bands of sheep and, finally, the homesteaders. During the later period, many acres of rangeland pasture land were farmed with dismal results. Some lands were left to recover as best they could, while many of the more fragile areas were finally reseeded with introduced species of grasses.

Many thousands of acres of rangeland in the nation and Montana have been badly eroded by wind and water, with the resulting loss of untold dollars worth of top soil.

In the last few years, a combination of poor livestock prices, favorable grain prices, and moisture conditions has again prompted the conversion of many acres of rangeland to crop production. With modern technology, perhaps many of these acres will remain in crop production; hopefully, the reconversion of the remainder to grassland will be accomplished in a planned and orderly fashion.

Current Status

In recent years, range management has generally improved, and today Montana's rangelands are producing at over one-half of their known potential. Range condition in each county is shown on the "Rangeland Resource and Range Condition" map following page 20 .

Effects of Improvements

Improvements in management practices and in the condition of the resource will result in numerous beneficial effects.

Environmental, Social Enhancement -- The following is a brief listing of some positive results that could be effected through range condition and range management improvements.

1. Accelerated or induced soil losses from wind and water erosion on native range would be minimized,

2. Pollution of air or water from grazing lands would be reduced,

3. The beauty of Montana would be enhanced by restoring a mantle of vegetation from border to border,

4. Production of sediment-free water from rangelands would be stabilized for better growth of vegetation and for recreation, urban and industrial, and instream flow uses,

5. Discriminating use of chemicals for fertilizing, vegetative control, insect control, or other purposes would help maintain water quality,

6. Rural communities would be more attractive places in which to live,

7. The viability of the family farm or ranch would be strengthened, and

8. The quality of recreation experiences would be improved.

Economic Impact -- A positive impact is being felt in many areas of Montana's economy as rangeland improvements are accomplished. The following list includes several categories where increased income can be expected and several areas where savings to the rancher and the state can be realized.

1. Increased livestock income

    a. Higher lamb and calf crop percentages, and
    b. Heavier weaning weights.

2. Reduced erosion costs

    a. Water washing or flooding damage minimized,
    b. Wind erosion damage minimized, and
    c. Erosion and sedimentation loss minimized.

3. Increased tax income at county, state, and federal levels

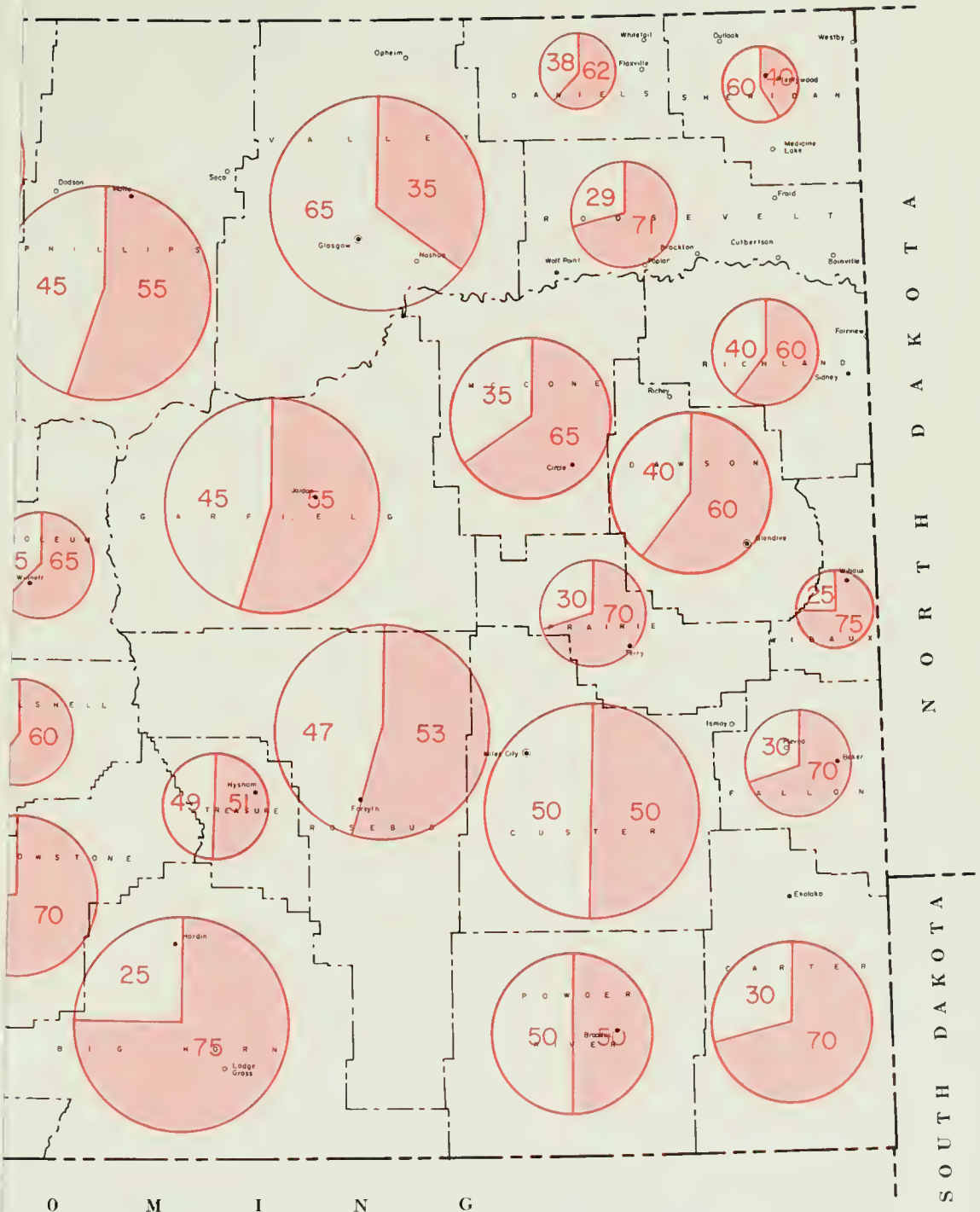
4. Reduced pollution control costs

5. Increased property values

    a. Ranch land, and
    b. Businesses.

Research conducted at experiment stations throughout the western range country has consistently shown the value of proper stocking and high condition ranges. Good range management means high calf and lamb percentages, heavy weaning weights, and higher net returns to ranchers, as listed above.

Costs and returns of different levels of range management carried out by ranchers throughout Montana indicate that good range management has a beneficial economic impact, as illustrated by the following example of a 5,000-acre range unit. What is important about this example is not the exact figures, but the concept of the economic benefits which can result from improved range management practices.



RANGELAND RESOURCE AND RANGE CONDITION

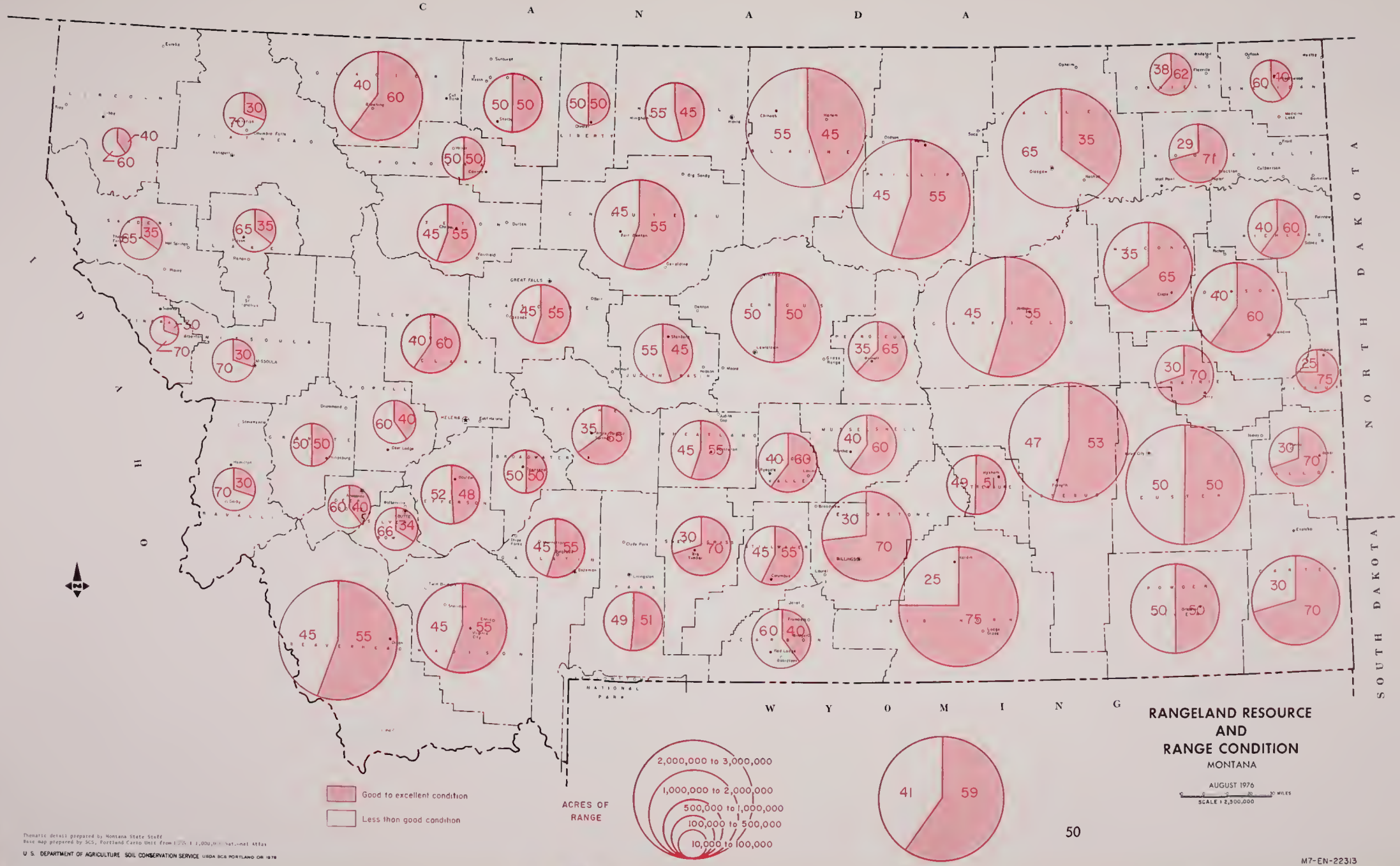
MONTANA

AUGUST 1976

SCALE 1:2,500,000

50

M7-EN-22313


C A N A D A
NORTH DAKOTA
SOUTH DAKOTA
W Y O M I N G
Good to excellent condition
Less than good condition
ACRES OF RANGE
2,000,000 to 3,000,000
1,000,000 to 2,000,000
500,000 to 1,000,000
100,000 to 500,000
10,000 to 100,000
41
59
RANGELAND RESOURCE AND RANGE CONDITION
MONTANA
AUGUST 1976
SCALE 1:2,500,000
50
M7-EN-22313
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE USDA SCS PORTLAND OR 1978

The example is a composite of results of studies carried out by a group of ranchers in southeastern Montana in 1976, with the assistance of U.S. Department of Agriculture, Soil Conservation Service personnel and local Committees for Rural Development.

TABLE 6

NET RETURNS FROM A 5,000-ACRE RANCH

UNDER DIFFERENT MANAGEMENT PRACTICES--1976

	Fair Range Condition	
	Overgrazed	Proper Use
Animal Units	412	133
Calf Crop	80%	92%
Weaning Weights	350 pounds	425 pounds
Winter Feed Period	5 months	4.5 months
Gross Income	$35,822.00	$16,957.00
Annual Costs	$49,930.00	$17,089.00
Net Return	$-14,108.00	$ -132.00

Source: U.S. Department of Agriculture, Soil Conservation Service 1977

The difference in net return between land which is being overgrazed and that which is in proper use is $13,976.00 in this example, or $2.80 per acre.

Besides proving beneficial in the ranch income/expense statement, approximately one-third the number of animals are required.

The decrease in cattle numbers (from 412 to 133 animals) would help, along with other measures, in improving range condition. There are approximately 27,000,000 acres of poor or fair condition range in Montana that could potentially be improved to good or excellent condition (U.S. Department of Agriculture, Soil Conservation Service 1977). The economic effects of improving range condition are just as favorable as those of improving management practices, as shown in the following table.

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TABLE 7

NET RETURNS FROM A 5,000-ACRE RANCH

UNDER DIFFERENT RANGE CONDITIONS--1976

	Proper Use	
	Fair Condition	Good Condition
Animal Units	133	206
Calf Crop	92%	94%
Weaning Weights	425 pounds	450 pounds
Winter Feed Period	4.5 months	3.5 months
Gross Income	$16,957.00	$29,084.00
Annual Costs	$17,089.00	$22,192.00
Net Return	$ -132.00	$ 6,892.00

Source: U.S. Department of Agriculture, Soil Conservation Service 1977

The difference in net return between 5,000 acres of range in fair condition and the same quantity in good condition is $7,024.00 in this example, or $1.40 per acre.

Note that, in the two preceding tables, cattle numbers were decreased from 412 to 133 animals, under proper management practices, and then increased to 206 animals under improved range conditions. The net stocking of the 5,000-acre ranch used as the example was ultimately halved (from 412 to 206), with a substantial increase in net income. Such decreases in cattle numbers would have the effect of reducing the present surplus, which has positive implications for market prices and stability.

Good condition range would bring economic benefits in other ways. An increased tax base would be established. Revenues from income tax would be increased. Property values would be expected to increase and stabilize with the improvement of range conditions. Agricultural community income would benefit from the increased ranch income being spent for goods and services throughout the state.

Other financial benefits could come from recreation. The total annual income from tourists and out-of-state recreationists amounted to $274,028,951 in 1974, and many of these persons sought their recreational activities on rangeland (Montana Department of Community Affairs 1976). Ranchers' income from this source might be enhanced with improved range conditions and a change in ranch management operations. Ranchers also have

the opportunity to supplement their regular income through paid guide services, pack trips, family ranch vacations, hunting, fishing, and camping privileges, etc. These enterprises plus the necessary supporting businesses, such as motels, hotels, restaurants, and sporting goods store, could add materially to the annual income of the state.

Other benefits would be in the form of savings and environmental improvements from reduction of pollution and erosion from the rangelands. There should be lower maintenance costs on city water supply systems, less pollution in streams and lakes, and less flood damage. A high quality, stabilized water supply would make water development for both urban and rural areas cheaper and more dependable.

PART TWO
THE PROGRAM

BACKGROUND

Realizing the serious degradation of our rangelands and the vast potential for revenues becoming available to the Montana rancher and farmer through improved management and renewal planning, the Hill County Conservation District felt it necessary and vital, in its district, to seek a means of improving Hill County's rangelands. After considering the several sources of assistance available and noting that the problem was not unique to Hill County, the district decided it would be worthwhile and helpful to all farmers and ranchers, as well as to the State of Montana, for a statewide program to be initiated.

With this thought in mind, the district on April 16, 1969, made a formal request to the Montana State Soil Conservation Committee, an agency of state government, to study the range resource potential and to coordinate a comprehensive development program with other agencies and organizations. This study was to include all rangelands in Montana.

On June 2, 1969, at its regular meeting, the request was formally acted upon by the State Committee. At that time it was decided to select a steering committee and utilize all available means to draft a rangeland improvement program to be submitted to the Governor for his approval. The State Soil Conservation Committee already was, by legislative mandate, to offer assistance to coordinate programs and disseminate information throughout the state concerning the activities and programs of Montana's conservation districts. Further, it was empowered to request assistance from any state or federal agency for the purpose of carrying out any of its assigned functions.

In 1971, under the Executive Reorganization Act, the Montana State Soil Conservation Committee was renamed the Montana Conservation Commission, and its functions were transferred to the Conservation Districts Division of the Department of Natural Resources and Conservation. The Montana 42nd Legislative Assembly approved the rangeland program by Joint Resolution No. 41 on February 27 of that year and provided for implementation by the Conservation Districts Division.

The Legislature abolished the Montana Conservation Commission as of July 1, 1973. Some of the Commission's functions were assumed by the Resource Conservation Advisory Council which was appointed by the Governor in August of that year to advise conservation districts on conservation matters which include the Montana Rangeland Resource Program.

When the Legislature convened for the 45th session in 1977, the Montana Rangeland Resource Program had been in successful operation for about six years. A bill called the "Montana Rangeland Resources Act" was introduced, passed, and signed by the Governor, making the Montana Rangeland Resource Program a statutory part of Montana State government and thus establishing the first rangeland resource law in the United States. A copy of this law is included as Appendix B.

ADMINISTRATION

It is intended that the program be put into practice at the "grass roots" level in the conservation districts. District programs are developed by the range leaders, with the help of the district supervisors, Rangeland Committee, and local Committee for Rural Development. The actions of the various districts are coordinated by the Montana Rangeland Resource Program Coordinator, Conservation Districts Division, Department of Natural Resources and Conservation.

State Level

Conservation Districts Division

Coordination of the Montana Rangeland Resource Program is the responsibility of the Conservation Districts Division of the Montana Department of Natural Resources and Conservation. The Conservation Districts Division's responsibilities are to both the state cooperative grazing districts and the conservation districts. The division's basic goal is to promote good natural resource management at the grass roots level; therefore, the rangeland program is one of its highest priorities.

The advice, counsel, and assistance of all interested state and federal agencies, as well as various organizations and individuals, are coordinated to implement the program. A discussion of interested agencies and organizations appears in Appendix C.

To coordinate all the information needed to accomplish the objectives outlined for the range program is an important part of the overall responsibilities of the Conservation Districts Division. To disseminate this information to all other interested groups and individuals and to the range leader in each conservation district in the state, who will actively implement the program, is a task of great magnitude. To present the program so that proper recognition is given to the many interdependent facets requires close liaison between the department and the districts.

Program Coordinator

Implementation of the program to coordinate the activities of the various landowners, both public and private, is assigned to a Program Coordinator. Since the Department of Natural Resources and Conservation is legislatively responsible for administering the Rangeland Resource Program, the coordinator is responsible to the Administrator of the Conservation Districts Division of the Department of Natural Resources and Conservation.

To accomplish the objectives outlined in the program, the coordinator must have some knowledge of the science of range management, but a knowledge of practical, everyday working problems is of primary importance. The benefits derived from the program largely depend on the ability of the coordinator to communicate between all parties affected. Since the program is neither a physical nor a technical undertaking, but rather an attempt to coordinate the efforts of various groups and agencies, the coordinator acts only in an advisory and counseling capacity. The strength of the coordinator rests in his abilities to

work with people and agencies, to gain cooperation from concerned organizations, and to inform people of the value and importance of range management and of plans or projects to achieve good management.

Relationships between the many users of rangeland are of major importance. The demands of recreationists are increasing and present a difficult problem, one in which the coordinator is involved at all times.

Since rangelands are often prime subdivision property, the coordinator is involved in subdivision regulation, planning, and zoning activity.

The increase in population is rapidly multiplying the demands for use of rangelands. Research to provide information that will enable landowners to increase production of food and fiber and simultaneously accommodate additional uses is vitally necessary. The coordinator can be very effective in helping to direct this activity.

Advisory Bodies

Montana Rangeland Resource Program Advisory Committee -- An advisory committee may be appointed by the Governor as provided in Sections 76-305 and 76-306, R.C.M. 1947 (see Appendix B for a copy of the "Montana Rangeland Resources Act," which becomes effective on July 1, 1977). The committee's duties would include reviewing work programs, suggesting work priorities, and advising the Program Coordinator. Committee members are to serve without compensation for indefinite terms.

Following is a list of the ad hoc committee members.

Chairman	Rancher.	John Vanisko
Vice-Chairman	Rancher.	Harold Simmes
Rancher	Eastern area of state.	Dennis Nathe
Rancher	West of Continental Divide	John Hollenback
Rancher	Southern area of state	Peter V. Jackson
Rancher	Northern area of state	Harold Simmes
Representative of	Soil Conservation Service.	Robert Ross (Retires 7-1-77 Joseph C. Zacek
	Montana State University Cooperative Extension Service. . . .	Carl Wambolt
	U.S. Forest Service.	Ted Russell
	Montana State University Dean of Agriculture.	Joe Asleson
	Farmers Home Administration.	Charles Green
	Montana Stockgrowers Association . .	Mons Teigen
	Department of Community Affairs Economic Development Division. . . .	Dick Draper
	School of Forestry University of Montana.	Lee Eddleman
	Department of Fish and Game.	Joe Egan
	Bureau of Land Management.	Dick Cleveland
	Montana Woolgrowers Association. . .	Robert Gilbert
	Department of Natural Resources and Conservation	P. T. Hacker
	Bureau of Indian Affairs	Charles Reed
	Montana Cattlemen's Association. . .	Alice Fryslie
	Department of State Lands.	Wilbur Erbe
	Society for Range Management	Curt Hughes
	U.S. Fish and Wildlife Service . . .	Robert Brown
	Agricultural Stabilization and Conservation Service	Tony Gies

Montana Rangeland Resource Program Executive Board -- It is expected that an Executive Board will be selected from the members of the Advisory Committee by the Program Coordinator.

Local Level

Conservation Districts

Advisory responsibility and guidance are secured from the conservation district supervisors. Five supervisors are legally elected

to four-year terms by the qualified voters of each conservation district. Two additional supervisors, one from each of two incorporated towns within the district, may be appointed by the governing body of the towns.

Range Leaders

To accomplish the goals outlined in the program, the first and most important need is for coordination. Implementation of the program requires the services of qualified persons. Their qualifications include an understanding of ranch operations and the many additional uses and responsibilities for which range is suited. The abilities to communicate and to negotiate between ranchers, agencies, and other affected parties are necessary qualifications of these individuals.

In all but one conservation district, a county range leader has been appointed by the conservation district supervisors and has assumed leadership of the Montana Rangeland Resource Program in that district. In Glacier County, the conservation district itself is administering the program. Those persons presently serving as range leaders are listed in Appendix D.

Examples of the duties of range leaders are:

1. To prepare assessments of the rangeland program in their areas, with the help of the local Committee for Rural Development or advisory committee and the Conservation Districts Division, showing:

   a. Progress made to date on range improvements,
   b. Present projects being carried out, and
   c. Future development goals and objectives of the Montana Rangeland Resource Program.

   A checklist which can be helpful to range leaders in handling this task is included as Appendix E.

2. To make more effective use of existing services in planning, research, and education from existing agencies and institutions.

3. To assist ranchers, sportsmen, recreationists, and other users of rangeland to become more compatible.

4. To minimize weaknesses in fire protection, vandalism and litter control, and public liability.

5. To provide consultation on the following projects:

   a. Reclamation of mined-over areas and disturbances from prospecting for minerals, coal, and oil,
   b. Urban beautification,
   c. Highway beautification,
   d. Reclamation of waste disposal areas, and
   e. Sediment reduction and pollution prevention and abatement.

6. To create an awareness of the importance of well managed rangelands for:

   a. General economy,
   b. Environmental quality, and
   c. Mitigating drought or other conditions.

Committees for Rural Development

In each county, a Committee for Rural Development is appointed by the State Committee for Rural Development and is composed of federal and state agency representatives who are stationed in the county. This committee meets regularly to discuss local activities including the Montana Rangeland Program. The county range leader is a designated member of the committee.

County Rangeland Advisory Committees

Each range leader has selected a committee composed of ranchers, businessmen, and agency and professional people to assist him in administering the program at the local level. These committee members serve voluntarily for indefinite terms.

Individual Level

The Montana Rangeland Resource Program was assembled with an awareness of many existing situations and traditions, some of which conflict.

Any program that affects such a large industry as agriculture in Montana requires the support and general approval of the people primarily affected. These are the land occupiers or ranchers. To obtain this support and the desired program implementation, it is necessary to strictly adhere to the fundamental concept of freedom for an individual to work and live in his own way and to provide a living for his family, as long as he does not encroach upon the freedom of others. With this freedom goes the responsibility of a citizen to protect the land and other natural resources, so that all people, now and in the future, will have the same privileges to live and work in the free manner we enjoy today.

Those responsible for safeguarding the land are entitled to technical assistance, advice, and guidance in the management and use of the resources.

With this in mind, the Rangeland Resource Program is based on counsel and advice from persons knowledgeable in rangeland management. If ranchers are properly informed and if management planning is coordinated between private landowners and public land management agencies, proper management of native ranges will become a reality with a minimum of additional rules and regulations concerning zoning, pollution, etc.

SUPPORT DATA

Certain basic data are necessary to make the Rangeland Resource Program effective. These include soils and range surveys, topographic maps, climatic information, land use data, range condition assessments, and awareness of recreational uses. Much of this information, concerning the entire state, is presented in "Part One. The Resource."

Rangeland Inventory

More specific inventories are basic to the Rangeland Resource Program. Detailed knowledge of the current availability and condition of local resources must precede any determination of needs and priorities for management and treatment.

The Montana Rangeland Inventory consists of assimilating information from various agencies and sources. These inventories essentially start with each ranch. However, inventories may be portrayed on a township, drainage, county, or regional basis. The Montana Rangeland Resource Program is designed to promote inventories on a conservation district basis for conservation district long range plans.

Program Assessment

An assessment of the situation in each county is being made by the local range leader to inventory past progress and present activities so that plans can be developed to meet future needs.

Other Planning Needs

Variations to rangeland inventory compilations will result from such planning needs as water quality plans under PL 92-500, Section 208; Allotment Management Plans of the Bureau of Land Management; U.S. Department of Agriculture "Conservation Needs Inventories"; and the U.S. Forest Service Forest and Rangeland Resources Planning Act.

GOALS

This section sets out the original goals, objectives, and directions of the Montana Rangeland Resource Program. A portion of this section is devoted to a detailed discussion of each goal. The situation is described, the goal set, the approach for gaining the goal outlined, the income potential estimated, the progress reported, and a timetable forecast.

It is not the intent of this program to adhere strictly to the letter of each goal, but, rather, to aim for the objectives and surpass the goals if possible. Should additional or alternative goals and objectives become apparent, appropriate changes will be made.

The following is a listing of the 10-year goals as established in 1970.

1. Eighty percent of the native range will be operated under some form of intensive management planning,

2. Fifty percent of the native range will be in excellent condition, with 30 percent in good condition,

3. Native range and pasture will be producing 40 percent more usable forage,

4. Eighty percent of the native range will have stockwater fully developed, with stockwater being developed on the remaining 20 percent,

5. Recreational use will increase by 500 percent, and

6. The wildlife habitat on native range will be improved to support a more stable wildlife population.

These original goals are generally being very well achieved.

Goal No. 1: Ranch Management Planning

Situation

For a ranch to be economically sound, total unit ranch planning is necessary in developing range resource management plans. All animals need to be considered and a balanced forage resource program developed. The results include faster improvement of native rangeland, full utilization of arable land, and, ultimately, increased ranch income.

Ranchers find it pays to systematically inventory their ranch resources and then balance land use with grazing animal numbers to sustain natural resources.

Range improvements on private lands show that in recent years many ranchers have been doing a good job of developing and carrying out management plans. Ranchers, in cooperation with conservation districts, have developed over 10,000 conservation plans and 2,073 Great Plains Contracts on more than 32,000,000 acres of rangeland (Ross 1977). The Great Plains program is a cooperative federal program whereby the federal government, through its designated agency, agrees to finance long range developments which are to be made according to a written, long range plan prepared by the Soil Conservation Service and the landowner.

State agencies such as the Montana Departments of State Lands and Fish and Game and federal agencies such as the U.S. Forest Service, Bureau of Land Management, Fish and Wildlife Service, and Bureau of Indian Affairs develop and carry out management plans on lands they administer in cooperation with their lessees or permittees.

Approach

Management plans will vary with each ranch unit since they are based on the needs of the individual ranch operation.

Memoranda of Agreement between federal, state, and private participants are being encouraged to coordinate planning on interspersed ownerships within the same management unit.

To develop a range management plan, the following items should be considered:

1. Resource inventory of the entire unit

    a. Soil,
    b. Climate,
    c. Range site and condition (acres),
    d. Dryland and irrigated pasture (acres),
    e. Hay and cropland (acres),
    f. Physical layout: fences, pastures, stockwater developments, etc.,
    g. Type of operation: cattle, sheep, wildlife, cow-calf, etc.,
    h. Capital and credit available, and
    i. Ownership and tenure arrangement.

2. Present method of operation

   a. Present balance of range, tame pasture, hay, and animal numbers, and
   b. Complete budget arrangement.

3. Alternatives in the process of planning

   a. Land use adjustments,
   b. Balance of feed, forage, and animal numbers,
   c. Range practices (proper use, grazing systems, brush control, fencing, stockwater development, range seeding, etc.), and
   d. Change in type of operation (sheep to cattle; cow-calf to yearlings).

4. Planned decisions of the operator or manager

   a. Economic factors,
   b. Labor, and
   c. Predator control.

Technical assistance in resource planning is available to ranchers and state and federal agencies from the Extension Service, Soil Conservation Service, and private range consultants.

The Bureau of Land Management and the U.S. Forest Service are developing intensive management plans on their units. The Bureau of Land Management is preparing Allotment Management Plans on all allotments, and recent federal regulations are directed toward more careful management of all public lands.

It is essential that affected agencies and ranchers work closely together to achieve the goal of intensive management plans on rangeland.

Progress

As set in 1970, Goal No. 1 is to have 80 percent of Montana's native ranges operating under some form of intensive management planning by 1980. At that time, 40 percent was subject to such planning, and the following timetable was established.

TABLE 8

SCHEDULE FOR ACHIEVING GOAL NO. 1

Year	Time Elapsed	Planning Completed
1974	4 Years	50%
1976	6 Years	60%
1978	8 Years	70%
1980	10 Years	80%

This goal is being met, as about 60 percent is under some management plan as of this date (1977).

Benefits

General -- Accomplishment of this goal will result in the highest practical return in forage production for livestock or game animals, recreation values, and watershed protection. It will minimize erosion and pollution from sediment, increase aesthetic values, and help to stablilize the ranching economy as well as the rural community. Well prepared range management plans should also provide for development and the best possible use of rangelands to combat periods of drought, recognized as a normal, recurring part of Montana's weather cycle.

Financial -- The economic potential from intensive management planning can result in increased income to the state's livestock industry. The income from uses other than livestock production can be increased several times. Monetary savings from erosion and pollution control and the value for water production and stabilization would also be great.

Goal No. 2: Native Range Condition

Situation

Range condition is defined as the present composition of vegetation in relation to the climax kind of vegetation for that particular site. Range condition should not be confused with degree of use. A range can be in excellent condition and still be closely utilized. However, if close or excessive use continues over an extended period of time, the dominant climax plants will decrease. Short grass and weedy type plants will then replace them, bringing about a lower range condition.

Approach

The primary approach is one of education, and ranchers are recognizing that good range management does pay. A well coordinated educational program developed in schools at all levels would acquaint the upcoming generation of ranchers with the value of and necessity for good range management. Demonstration ranches or areas of exceptional management noted at strategic points about the state would be of continuing interest to observant individuals. Range leaders through their advisory committees should continue to coordinate the efforts of agencies to acquaint all persons in related industries and urban areas with the importance of range management and the economic and aesthetic values of good-to-excellent condition range. Informational meetings would be of value to acquaint the general public with research data and technical and financial assistance available. A continuing public relations program will assist in keeping the program active, and in keeping control at the local level.

Legal language (see Appendix F) has been developed to enable incorporating standard range management clauses into contracts, leases, and other land management agreements for ranch units. The Montana Bar Association has approved this effort.

Project areas can be created to plan and carry out large range management projects such as complex stockwater development, large reseeding efforts, and timber and brush control. Such projects would involve and benefit ranches and/or whole communities.

Coordinated planning between persons and agencies is being encouraged to increase planning efficiency and prevent duplication. Coordinated planning also minimizes the possibility of treatment practices conflicting with one another.

The Department of State Lands is encouraging good range management by its lease arrangements. School trust rangeland administered by the State Land Commissioner is leased for five- or ten-year periods. Use of these lands is governed by range management regulations and enforced through periodic inspections.

Progress

As set in 1970, Goal No. 2 is to have 50 percent of the public range in excellent condition, 30 percent in good condition, and 20 percent in fair condition by 1980. In addition, privately-owned range is to be improved according to the following timetable.

TABLE 9

SCHEDULE FOR ACHIEVING GOAL NO. 2 ON PRIVATE LANDS

Year	Time Elapsed	Condition			
		Excellent	Good	Fair	Poor
1974	4 Years	30%	30%	30%	10%
1976	6 Years	40%	30%	20%	10%
1978	8 Years	45%	30%	15%	10%
1980	10 Years	50%	30%	15%	5%

September 1, 1976

OLD WEST REGIONAL RANGELAND IMPROVEMENT PROGRAM

Forest Service - Montana

Counties	Condition Class - Acres Good	Fair	Poor	Total
Beaverhead	250,288	69,390	23,130	342,808
Broadwater	40,043	11,670	1,351	53,064
Carbon	17,645	8,822	2,940	29,407
Carter	21,308	42,086	4,025	67,419
Cascade	11,033	2,247	595	13,875
Chouteau	10,976	1,464	-0-	12,440
Deer Lodge	15,109	7,092	3,682	25,883
Fergus	8,387	1,838	-0-	10,225
Flathead	38,466	42,072	32,517	113,055
Gallatin	170,683	41,110	7,281	219,074
Glacier	4,100	2,000	200	6,300
Golden Valley	2,045	665	-0-	2,710
Granite	51,799	21,776	3,006	76,581
Jefferson	106,396	25,052	1,627	133,075
Lake	2,620	3,158	-0-	5,778
Lewis & Clark	25,577	28,977	7,592	62,146
Lincoln	166,757	30,881	325,497	523,135
Madison	152,598	62,301	19,330	234,229
Meagher	78,468	11,755	337	90,560
Mineral	23,763	12,336	664	36,763
Missoula	32,379	67,871	5,219	105,469
Park	124,526	62,599	2,335	189,460
Pondera	2,000	200	-0-	2,200
Powder River	200,135	136,012	16,794	352,941
Powell	33,419	16,578	2,750	52,747
Ravalli	48,607	76,902	13,953	139,462
Rosebud	20,609	35,461	15,880	71,950
Sanders	28,630	18,279	919	47,828
Silver Bow	44,962	9,401	1,691	56,054
Stillwater	6,878	3,439	1,146	11,463
Sweet Grass	26,739	6,227	1,459	34,425
Teton	10,829	2,728	100	13,657
Wheatland	13,849	1,339	-0-	15,188
TOTALS	1,882,021 (57%)	832,987 (27%)	558,867 (16%)	3,273,875

An estimate made in 1970 by each local county Technical Action Panel (now called Committee for Rural Development) indicated that approximately 50 percent of the state and private rangeland in Montana was in good-to-excellent condition (Department of Agriculture, Soil Conservation Service 1970b). A similar survey taken in 1976 showed nearly a 10 percent improvement, as indicated in the following table.

TABLE 10

ESTIMATED CONDITION OF STATE AND PRIVATE RANGELAND

Year	Excellent	Good	Fair	Poor
1970	10%	38%	42%	10%
1976	12%	47%	34%	7%

SOURCE: Furnished to U.S. Department of Agriculture, Soil Conservation Service, by Committee for Rural Development, 1976

The current condition of rangeland statewide is shown by ownership in Table 11.

TABLE 11

STATEWIDE RANGELAND CONDITION BY OWNERSHIP -- 1976

	Excellent	Good	Fair	Poor
Private & State	12%	47%	34%	7%

Federal	Good-to-Excellent	Poor-to-Fair
Bureau of Land Management	51%	49%
U.S. Forest Service	63%	37% (31%-Fair, 6%-Poor)

SOURCES: U.S. Department of the Interior, Bureau of Land Management 1977
U.S. Department of Agriculture, Forest Service 1977

Although there is substantial improvement, this goal is not being met as well as was expected.

Benefits

General -- The improvement of range condition is of primary importance and is the factor which permits increased production through additional use. Condition becomes increasingly important when drought, insects, economic factors, or other factors put short-term stresses upon the rangelands.

Financial -- Economic benefits can be realized through increases in land value, livestock numbers, pounds of livestock products, lamb and calf crop percentages, marketing weights, tax base, and natural beauty. These will make a direct contribution to the general economy of the State of Montana.

Goal No. 3: Usable Forage Production

Situation

It is estimated that Montana's rangelands are presently producing at 59 percent of their potential.

Approach

A large percentage of the potential increase in production of ranges and pastures will be accomplished through the application of proven practices. Examples of these are rest rotation, deferred grazing, fencing, and brush or scrub timber control. In many areas, weed control will aid in improving range condition. Improved varieties of introduced grasses will also increase carrying capacity.

During the last 20 years, tremendous advances have been made in reseeding, fertilizing, and water retention practices. Many of these are still in the experimental stage, but a great number are proven and should be put into effect.

Many more demonstration plots and ranches are needed to show ranchers and the general public the possibilities in their home areas. Agencies are promoting the use of native grass seed wherever practical, but introduced species may be superior in some ways. In cases where soil moisture is adequate, field trials of fertilizers have been done on seeded areas.

Cultivating and reseeding of poor condition native ranges may be desirable since existing species will take longer to gain the necessary forage increase. In many instances the U.S. Department of Agriculture's Agricultural Conservation Program or Great Plains Contracts will assist the improvement plan financially.

Progress

Goal No. 3, as set in 1970, is to increase range and pasture forage production by 40 percent. At that time statewide pasture and range were determined to be producing at 48 percent of their potential. Public lands should have gained this increase in eight years (by 1978). Privately-owned land is to be improved according to the following timetable.

TABLE 12

SCHEDULE FOR ACHIEVING GOAL NO. 3 ON PRIVATE LANDS

Year	Time Elapsed	Desired Percentage Increase	Desired Percentage of Usable Forage Produced
1974	4 Years	15%	63%
1976	6 Years	20%	68%
1978	8 Years	30%	78%
1980	10 Years	40%	88%

As noted above, rangelands in Montana are producing at 59 percent of their potential. A substantial (11%) improvement has been realized, but this goal is not being met as well as originally expected.

Benefits

General -- Statistics indicate that between 1975 and the year 2012, world population will double (Brown et al. 1976). To contribute fairly to the increased demands for forage for domestic livestock, Montana's rangelands must not only be maintained, but must be improved to provide maximum production.

Financial -- The largest economic increase from forage will be from domestic livestock production. A definite increase in weaning weights will be realized from more and higher quality foods, and the result will be more pounds of meat produced from the range.

Goal No. 4: Stockwater Development

Situation

One of the most important factors in harvesting the maximum grass crop from our rangelands is a good supply of usable water, strategically located. Adequate stockwater facilities result in better distribution of livestock and, consequently, improved grazing management.

The distance that animals will travel for water depends upon the terrain, weather conditions, and kind of animals. Ordinarily, stock can travel from one-half to one mile to water, but distances over one mile are usually considered too far for good range management. Similarly, animals that have to wait hours to satisfy their thirst lose time that should be spent grazing.

Research in recent years has been conducted on grazing patterns and the result measured in pounds of gain. The increased lamb and calf crop percentages have clearly shown the importance of water, its location, and its amount. For example, excellent condition range with an ample supply of drinking water will significantly out-produce the same type area where animals must travel excessive distances to drink.

This effect is further complicated by weather conditions. When animals have to travel a long way in hot weather, their gains are cut severely, and, in extreme cases, weight is lost. The same holds true during periods of cold weather. Animals can digest rough feed and make gains in cold weather if their supply of water is open, convenient, and plentiful.

To obtain the maximum efficiency in grazing distribution and harvesting of the grass, water is a significant factor, and it must be seriously considered in all range planning and development.

Approach

Springs, where available, are the most practical type of water development. Even when springs are available and in the proper location, they need to be developed and piped into troughs to assure maximum gain in weight and sanitation conditions.

During recent years, improvements by industry and advancements in research have opened the door to new and dramatic changes in our approach to water development on rangelands. With the development of plastic pipe, which can be installed by machine, water can be economically piped great distances.

Many unusual stockwater situations can be solved with ingenuity and planning. Examples are pumps powered by water wheels that can be geared to raise water to great heights. Hydraulic rams are also effective in many cases. These installations are reasonably priced, and maintenance costs are low. Where ground water is unavailable by springs, pipelines, or wells, then artificial watersheds to collect and store runoff water should be considered. Artificial watersheds are expensive, but, to get good water supplies for livestock and wildlife, they may be necessary.

In many cases, several operators or a combination of ranchers and agencies can join together in projects to develop large range areas that are little used because of inadequate water. Ranchers and agencies should be encouraged to coordinate planning of management practices that potentially will benefit one another. A good cooperative plan in many cases can help tremendously in both land development and good relationships between neighbors. Under certain conditions, land exchanges may facilitate proper water distribution.

There are many other ways to develop water which are not described here. The university or Extension Service has been urged to compile a catalog of stockwater development ideas, and can furnish information on this subject. Financial assistance may be available from the Montana Department of Natural Resources and Conservation, which includes water development in its Renewable Resource Loan Program authorized by the Legislature.

Progress

By 1970, stockwater had been developed on 60% of the Montana rangeland. As set at that time, Goal No. 4 was to have a fully developed water supply on 80 percent of the native range, and the remaining 20 percent in the process of being developed, by 1980. The following timetable was established.

TABLE 13

SCHEDULE FOR ACHIEVING GOAL NO. 4

Year	Time Elapsed	Rangeland With Developed Stockwater
1975	5 Years	70%
1978	8 Years	80%
1980	10 Years	Remaining 20% being planned for development

The Agricultural Stabilization and Conservation Service and the Soil Conservation Service report that this is being accomplished on schedule, with an increase of 9.36 percent from 1970 to 1975 (U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service 1977).

Benefits

General -- Full development of remote, ungrazed areas or partially grazed sites will allow for an increase in both livestock and wild game numbers. It will also enhance wildlife habitat.

Erosion will be cut somewhat by the cattle doing less trailing to and from water. Ranchers and agencies should properly develop the available water to prevent excess runoff or sedimentation and pollution.

Well developed ranges will survive periods of stress from unfavorable weather or economic conditions and show less abuse than poorly developed rangelands.

Financial -- Well developed ranges will produce more pounds of livestock and more winter grazing. With adequate water, cattle may in some instances be allowed to graze during all or part of the winter with some concentrate feed, which can materially lower wintering costs.

Goal No. 5: Increased Recreational Use

Situation

The situation today is one of increasing demand for decreasing space.

It is true that large areas of public land are available to the general public. In addition, the average rancher today is still very generous, allowing most people the privilege of free trespass.

However, as the price-cost and efficiency squeeze continues, this privilege has a limited life expectancy. A large portion of private land is slowly being closed, as one rancher after another finds it impossible to operate with the general public freely traveling over his lands.

Approach

The most important factor relative to increased recreational use of the range and/or pasture lands is the condition of the vegetation. Range that is in good-to-excellent condition can withstand trampling from people or disturbance by vehicles, while range in poor condition will deteriorate rapidly under light recreational pressure. Therefore, the basic programs of range improvement are necessary to increase recreational use.

Educational programs about the potential of the grasslands for recreational uses need to be initiated so that urban people will realize the enjoyment of grassland-based recreation. Landowners need to recognize that recreation represents a possible source of income. Also, they need to realize that they have a responsibility for the betterment of the general environment and the general well-being of our country.

The importance of planning for multiple use cannot be stressed too much. If the users clash, even on minor points, the chances for maximum development are seriously curbed.

Landowner-user relationships are recognized as another important factor that must be resolved if maximum use of rangeland for recreation is to be achieved. Relationships between landowners and recreationists are improving, but organized group as well as individual actions are necessary to resolve this situation.

In range management plans that include potential recreation development, such things as picnic areas and campsites must be considered. Whenever the attraction sites are large enough for and capable of supporting development, the construction of such facilities as tables, fireplaces, and toilets will cut down wear and tear on the land while obtaining optimum use.

The plans should also include roads and trails in locations that will reduce erosion and runoff. Roads must be sited so that people will follow them as they travel to the attraction areas. Well-planned access routes also help recreationists to be compatible with livestock movements.

Legal problems compose a very significant category where changes or improvements must be made to gain maximum recreation use. Memoranda of Understanding between private landowners and public land agencies need to be drawn up to gain mutual cooperation in matters of recreation and to facilitate good recreation management. There is a real necessity to get new or updated laws to cover fire protection, littering, vandalism, and public liability. Unless private landowners can be relieved of the responsibility of providing these service and maintenance costs, they may have no alternative but to restrict the use of their property by the public.

Progress

In 1970, Goal No. 5 was set as increasing recreational use of rangelands by 500 percent by 1980, through a plan mutually acceptable to landowners and recreationists. The following timetable was established.

TABLE 14

SCHEDULE FOR ACHIEVING GOAL NO. 5

Year	Time Elapsed	Increase in Recreation Use On Grasslands
1974	4 Years	100%
1976	6 Years	200%
1978	8 Years	300%
1980	10 Years	500%

It is difficult to determine to what degree this goal is being met. However, there has been a very decided increase in recreational use of rangeland. As relationships improve, the use of rangeland for recreation should improve in direct proportion.

Benefits

General -- The rangelands are areas in which large numbers of confined urban people may potentially find relief from their crowded situations. A direct benefit of this would be a more healthy attitude in people, both rural and urban. In general, social values will be improved by having additional recreational areas available for people.

Financial -- Income from recreation on grasslands comes in many forms, both direct and indirect. The most easily assessed will be the income to the private landholder who may wish to take advantage of the desires of the public and charge a fee for services, facilities, and use of the rangeland for recreational purposes. Some landowners may turn to recreation fees to get the maximum return from their holdings.

Nearby communities will be economically enhanced by more people coming from urban areas to enjoy the pleasures of the rangelands.

Goal No. 6: Wildlife Habitat Improvement

Situation

Wildlife are dependent on and products of their habitat. The quality and quantity of the habitat are a measure of the health of a wildlife population.

Montana is still blessed with a wide variety of mammals that could be increased in numbers, and perhaps even variety, if the habitat were improved. Such birds as grouse, ducks, geese, songbirds, etc., would also increase in number if the situation were favorable.

Man's presence must be taken into consideration. There will never be as many as the original numbers of some species, such as the buffalo, but a reasonable balance can be obtained with planning and development.

Approach

The first and by far the most important consideration necessary to attract or maintain a good wildlife population is an excellent cover of the proper vegetation. Ranges in good-to-excellent condition more easily support numerous varieties of small birds and mammals in large numbers with little competition among species.

Under the Montana Rangeland Resource Program, wildlife habitat is an integral part of management planning and implementation. Range management planning can easily accommodate a wide variety of species by taking into consideration the basic requirements of the wildlife. In some instances there may be a divergence of need for food, and more especially for shelter and nesting facilities, for different kinds of wildlife. These needs should be recognized and generally can be reconciled in good management plans. Ranchers whose management plans provide for ample forage of the right kinds can more easily set aside reasonable areas that have wildlife habitat as their highest production.

Curbs on some types of animals are necessary to provide a good working and living balance. Wildlife, like livestock, must be kept in balance with the food supplies. In most instances, some hunter harvest of wildlife must occur. Pesticide use and predator control measures are necessary, but control to prevent extinction of some species is also necessary.

Although the weed problem is a major priority, indiscriminate use of herbicides should not be allowed as wildlife habitat, water quality, and beneficial plants can be seriously affected. Use of herbicides, like that of pesticides and predator control measures, should be strictly supervised and be a part of the wildlife management program.

Since 65 percent of the forage for wildlife is produced on privately-owned range, it is very important that good relations between landowners and sportsmen be maintained. With an improvement in range habitats and with satisfactory landowner-sportsmen relations, stable wildlife populations and good game management can be accomplished.

Possibly, some provision could be made to compensate private landowners for feed taken by wildlife, and for the inconveniences caused by sportsmen, in connection with the wildlife program.

Progress

As set in 1970, Goal No. 6 is to improve wildlife habitat on native range to encourage and stabilize wildlife populations. Because of the close correlation between range condition and animal numbers, it is reasonable to assess progress according to the timetable established for Goal No. 2. Because range condition is being improved statewide (as noted on page 39), wildlife habitat is thought to be improving correspondingly.

Benefits

Financial -- Financial effects throughout the state resulting from improved wildlife habitat are quite difficult to separate from other general income categories. Increased numbers of game draw more sportsmen -- and their money -- which is a direct benefit. Large varieties of birds and animals and improved scenic beauty may also attract people who are interested in such things as photography and other aesthetic values.

PROJECTS

The Rangeland Resource Program includes specific projects and plans needing attention. A list of miscellaneous subjects has also been assembled. The following tables present only a small portion of the work load; the lists also report the general status of each project.

TABLE 15

SPECIFIC PROJECTS

Project	Status
Provide language to be used by the legal profession when drawing up contracts, leases, endowments, etc., that will provide for management protection on the lands affected	Completed
Assist in negotiating agreements with loaning groups, public and private, whereby principal payments can be deferred while specific range management programs are established on the lands covered by the loans	Ongoing
Assemble a rangeland inventory, including economic impact, to be completed and presented to the Governor and the Department of Community Affairs	Ongoing
Identify demonstration ranches strategically located throughout the state	Ongoing
Request the Cooperative Extension Service to develop a catalog of stockwater development ideas	Ongoing
Assist in establishment of range research projects under the supervision of the Montana Experiment Station (grazing systems study and comparative study of management operations)	Inactive
Offer the range program to county planners and county planning boards	Ongoing
Develop a rangeland brochure for each county	Being considered
Develop a Rangeland Resource Program brochure	Completed
Develop rangeland drought management plan guidelines	Completed
Develop rangeland water quality management guidelines	Ongoing

Table 16, like the preceding one, contains only a partial listing. It is assembled as an example of what should be considered. One of the high

priority activities of the coordinator has been to create a more complete listing of these projects and plans and to ascertain just what effect they have on the rangeland or what the rangeland's part will be in these plans.

TABLE 16

MISCELLANEOUS, COINCIDENTAL PROJECTS AND PLANS

Project or Plan	Status	Lead Agency or Cooperating Entity
Reclamation of mined land	Ongoing	Department of State Lands
Urban beautification	Ongoing	City-county planning units
Planning and reclamation of industrial areas	Ongoing	City-county planning units
Municipal or industrial water supply	Ongoing	Cities, Department of Health and Environmental Sciences
Reclamation of waste disposal areas	Ongoing	Department of Health and Environmental Sciences, Counties and Cities
Highway beautification	Ongoing	Department of Highways
Rural visits for traveling public	Ongoing	Counties and state
Airport maintenance	Ongoing	Federal Aviation Administration
Revegetation of military sites (firing ranges, impoundment areas)	Ongoing	U.S. Army Corps of Engineers
Revegetation of logged areas	Ongoing	U.S. Forest Service
Revegetation of disturbances from exploratory prospect for minerals, coal, and oil	Ongoing	Department of State Lands
Control of wind and water erosion and sedimentation problems	Ongoing	Conservation districts
Stockwater developments	Ongoing	Conservation districts
Water quality control	Ongoing	Conservation districts, Department of Health and Environmental Sciences
Weather modification research	Ongoing	High Plains Experiment Program

GENERAL PROGRAM RECOMMENDATIONS

This section recommends projects of long duration. Several groups and individuals will generally participate jointly in each.

Those listed are just a few of the total. New ones should be added periodically. The coordinator and advisory council will periodically review this section for additions and priorities.

1. All federal and state organizations should coordinate and unify range survey analysis methods and management techniques so that data can be uniformly interpreted and interchangeable among all agencies,

2. The concept of optimum development of all compatible uses should be accepted and applied to all public lands,

3. The optimum development concept should be explained to private range landowners, and they should be encouraged to adopt this concept,

4. Budgets of federal and state agencies should be revised to more accurately reflect the importance of their respective responsibilities concerning grazing lands,

5. Contract-type cost sharing (the Great Plains concept) should be made available for all rangelands in Montana,

6. The use of Farmers Home Administration and other federal loans and grants should be accelerated, and more strict provisions should be included regarding management of range areas affected by loans,

7. Agricultural Stabilization and Conservation Service cost-sharing practices should be closely related to management plans, especially in range practices,

8. The low-interest Renewable Resource Loan Program should be used for rangeland developments,

9. The possibility of establishing a no-interest loan program for rangeland improvements, modeled after the Utah Plan, should be studied,

10. Montana should be represented at regional and national rangeland meetings, whether held individually or in conjunction with a broader conference,

11. Resource Conservation and Development projects should put more emphasis on range management in their programs,

12. County Committees for Rural Development should assist range leaders with the rangeland program,

13. The importance of planning various land uses must be stressed at local levels through Committees for Rural Development and planning boards,

14. Federal (Forest Service, Bureau of Land Management, and Soil Conservation Service) and state (Department of State Lands and Department of Highways) agencies should consider normal ranch operations, including livestock movement and range uses, in the siting and construction of roads, trails, and access routes,

15. Education programs concerning the uses and potential of rangeland should be initiated and continued at all scholastic levels with cooperation from the Department of Public Instruction and local schools,

16. A joint drive should be coordinated by agencies to acquaint all persons in related industries and urban areas with the importance of range management and the economic and aesthetic values of good-to-excellent condition range,

17. Demonstration areas should be developed at strategic locations as a joint effort of agencies,

18. Tours and range schools, such as the Agricultural Lenders' School and Ranchers' Range School, should be quadrupled in number and spaced conveniently about the state,

19. Current research in native range fertilization should be continued,

20. Practices involving use of insecticides and herbicides should be carefully examined so that hazards can be eliminated and progress accelerated,

21. Research on mechanical and biological methods of brush and plant control should be substantially increased,

22. Range leaders should continue to work closely with county weed boards to prevent the spread of undesirable and noxious weeds on rangeland,

23. Improvements in landowner-sportsmen and landowner-recreationists relationships are necessary and should be assisted by the Department of Fish and Game and the Rural Area Development Committees,

24. Memoranda of Understanding concerning recreation management should be prepared on a cooperative basis between private landowners and public land agencies,

25. A study should be made of the desirability of providing some form of compensation to landowners for inconvenience caused by the general public (sportsmen and recreationists),

26. Existing Memoranda of Understanding should be re-examined and updated by all state and federal agencies, and

27. Special committees should be appointed to study and draw up legislation on such legal problems as fire protection, littering, vandalism, and public liability on rangeland.

CONCLUSION

Our renewable natural resources are, without doubt, our greatest source of wealth and beauty, and rangeland is a vast renewable resource.

The value of rangeland, once overlooked and abused, is beginning to be recognized, and its condition has been improved with better, scientific management. However, its immense potential for livestock forage, recreation, wildlife habitat, and numerous other uses is far from being fully tapped.

The additional wealth which could be realized from rangeland is probably the easiest to attain of any we have in Montana. Substantial economic return can be gained without investing large amounts of capital, importing large numbers of workers, or infringing on already established industries.

With proper implementation of the Rangeland Resource Program, rangeland, water, and other renewable natural resources could be improved. The opportunity is here, the need is great, the goals are high. The challenge can be met through the properly coordinated, sincere efforts of all who will benefit from this important program.

APPENDICES

APPENDIX A

LAWS RELATED TO RANGELAND

Federal

Taylor Grazing Act, 43 U.S.C.A. § 315 et seq. An act to provide the most beneficial use of public range by the creation of grazing districts.

Federal Water Pollution Control Act, 33 U.S.C.A. § 1151 et seq. An act to enhance the quality and value of water resources and to establish a national policy for the prevention, control, and abatement of water pollution.

Forest and Rangeland Renewable Resources Planning Act of 1974, Public Law 93-378, 88 Stat. 476 (16 U.S.C.A. § 1601 et seq.). An act to ensure that Forest Service programs make appropriate contributions to meet the nation's future needs.

Federal Land Policy and Land Management Act of 1976 (commonly known as the BLM Organic Act), Public Law 94-579, 90 Stat. 2744. An act which provides for public land policy and administration for the management, protection, development, and enhancement of public lands.

Soil Conservation and Domestic Allotment Act, 49 Stat. 163 (16 U.S.C.A. § 590a et seq.). An act establishing the Soil Conservation Service and authorizing a national soil and water conservation program carried out through conservation districts. The Great Plains Conservation Program, providing long-term contracts to instill planned conservation measures, was authorized pursuant to 16 U.S.C.A. § 590f.

The Watershed Protection and Flood Prevention Act, Public Law 92-419, 86 Stat. 667 (16 U.S.C.A. § 1001 et seq). An act providing for watershed protection and flood prevention in small watersheds and authorizing river basin investigations.

Fish and Wildlife Act, (16 U.S.C.A. § 742A et seq.). An act to provide authority of policy guidance for conservation, restoration, and propagation of endangered and threatened species of fish, wildlife, and plants.

State

The Grass Conservation Act, Section 46-2301 et seq., R.C.M. 1947. An act to provide for the conservation, protection, restoration, and proper utilization of grass and range resources of the State of Montana.

Renewable Resources Development Act, Section 89-3601 et seq., R.C.M. 1947. An act relating to the renewable resources development program of the state, providing for the creation of state debt by the issuance of bonds, and providing for the making of loans and grants.

The Montana Weed Control Act, Section 16-1701, et seq., R.C.M. 1947. An act to define noxious weeds and weedseed and declare them a nuisance.

The Natural Streambed and Land Preservation Act of 1975, Section 26-1510 et seq., R.C.M. 1947. An act to preserve the natural rivers, streams, and land adjacent to them in their natural or existing state.

The Montana Water Use Act, Section 89-865 et seq., R.C.M. 1947. An act to provide for the administration, control, and regulation of water rights, and to establish a system of centralized records of water rights.

Section 19-124, R.C.M. 1947. An act designating Blue Bunch Wheat Grass as the official grass of the State of Montana.

Montana Rangeland Resources Act, Section 76-301 et seq., R.C.M. 1947. An act to establish a state program of rangeland management.

APPENDIX B

House Bill No. 484 "Montana Rangeland Resources Act"

UNITED STATES OF AMERICA,)
State of Montana) ss.

I, FRANK MURRAY, Secretary of State of the State of Montana, do hereby certify that the following is a true and correct copy of HOUSE Bill No. 484, Chapter No. 406, Montana Session Laws of 1977, enacted by the Forty-fifth Legislature of the State of Montana, approved by Thomas L. Judge, Governor of said State, on the 18th day of April, 1977, and effective July 1, 1977.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the great Seal of said State.

Done at the City of Helena, the Capital of said State, this 13th day of May, 1977.

Frank Murray
Secretary of State

. . . . . .

CHAPTER NO. 406
MONTANA SESSION LAWS 1977
HOUSE BILL NO. 484

AN ACT, WHICH SHALL BE KNOWN AS THE "MONTANA RANGELAND RESOURCES ACT", TO BE ADMINISTERED BY THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION; ESTABLISHING THE MONTANA RANGELAND RESOURCES COMMITTEE TO PROMOTE THE COORDINATION OF ACTIVITIES INTENDED TO MAINTAIN AND ENHANCE THE RANGELAND RESOURCES OF THE STATE OF MONTANA.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:

Section 1. There is a new R.C.M. section numbered 76-301 that reads as follows:

76-301. Short title. This act shall be known as the "Montana Rangeland Resources Act".

Section 2. There is a new R.C.M. section numbered 76-302 that reads as follows:

76-302. Purpose. The purpose of this act is to establish a program of rangeland management whereby:

(1) the importance of Montana's rangeland with respect to livestock, forage, wildlife habitat, high-quality water production, pollution control, erosion control, recreation, and the natural beauty of the state is recognized;

(2) cooperation and coordination of range management activities between persons and organizations charged with or having the management of rangeland, whether private or public, can be promoted and developed; and

(3) those who are doing exceptional work in range management can receive appropriate recognition.

Section 3. There is a new R.C.M. section numbered 76-303 that reads as follows:

76-303. Definitions. As used in this act, the following definitions apply:

(1) "Rangeland" means land on which the native vegetation (climax or natural potential) is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing use. The term includes lands revegetated naturally or artifically to provide a forage cover that is managed like native vegetation. Rangelands include natural grasslands, savannahs, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet

meadows.

(2) "Grazeable woodlands" means forest land on which the understory includes, as an integral part of the forest plant community, plants that can be grazed without significantly impairing other forest values.

(3) "Range management" means a distinct discipline founded on ecological principles and dealing with the husbandry of rangelands and range resources.

(4) "Montana rangeland resource program" means the rangeland resource program administered by the conservation districts division of the department of natural resources and conservation in concert with the Montana conservation districts law and the Grass Conservation Act to maintain and enhance the rangeland resources of the state.

(5) "Department" means the department of natural resources and conservation.

(6) "Committee" means the Montana rangeland resources committee selected as provided in 76-306.

(7) "Users of rangeland" means all persons, including but not limited to ranchers, farmers, sportsmen, recreationists, and others appreciative of the functional, productive, aesthetic, and recreational uses of rangelands.

Section 4. There is a new R.C.M. section numbered 76-304 that reads as follows:

76-304. State coordinator. (1) The department shall maintain and staff the office of state coordinator for the rangeland resources act.

(2) The state coordinator shall:

(a) serve as an advisor, counselor, and coordinator for and between persons and agencies involved in range management;

(b) strive to create understanding and compatibility between the many users of rangeland, including sportsmen, recreationists, ranchers, and others;

(c) promote and coordinate the adoption and implementation of sound range management plans to minimize conflicts between governmental agencies and private landowners;

(d) participate in zoning and planning studies to insure that native ranges are adequately represented at sessions for development of zoning and planning regulations;

(e) coordinate range management research to help prevent duplication and overlap of effort in this area.

Section 5. There is a new R.C.M. section numbered 76-305 that reads as follows:

76-305. Committee composition. The governor may select a committee in accordance with 76-306 which is composed as follows:

(1) a chairman who is a rancher;

(2) a vice-chairman who is a rancher;

(3) a rancher from the eastern area of the state;

(4) a rancher from the northern area of the state;

(5) a rancher from the area of the state west of the continental divide;

(6) a rancher from the southern area of the state;

(7) a representative from each of the following agencies:

(a) Soil conservation service;

(b) United States forest service;

(c) Montana state university;

(d) Farmers home administration;

(e) Montana stockgrowers association;

(f) Office of economic development division;

(g) School of forestry of the university of Montana;

(h) Department of fish and game;

(i) Bureau of land management;

(j) Montana woolgrowers association;

(k) Department of natural resources and conservation;

(l) Bureau of Indian affairs;

(m) Montana cattlemen's association;

(n) Department of state lands;

(o) Society for range management;

(p) United States fish and wildlife service;

(q) United States agricultural and stabilization service.

Section 6. There is a new R.C.M. section numbered 76-306

that reads as follows:

76-306. Committee -- appointment -- tenure. (1) The governor shall select the members described in 76-305, subsections (1) through (6) from a list submitted by the executive committee of the association of conservation districts and the board of directors of the Montana association of state grazing districts.

(2) The governor shall select the members described in 76-305, subsection (7) from a list submitted by their respective agencies and/or organizations.

(3) The committee members shall serve without compensation.

(4) All persons appointed to the committee shall serve at the pleasure of the governor.

Section 7. There is a new R.C.M. section numbered 76-307 that reads as follows:

76-307. Duties of committee. The committee shall:

(1) review and recommend annual and long-range work programs;

(2) suggest priorities of work;

(3) provide advice and counsel to the coordinator for carrying out the rangeland resource program.

APPENDIX C

PERSONS AND GROUPS WITH
RANGELAND MANAGEMENT RESPONSIBILITIES

Following is a list of individuals, groups, and organizations that have direct or indirect responsibilities in the management of our grazing lands. Each category is then briefly described.

1. Private Landholders

    a. Individual ranch owners/operators,
    b. Absentee owners,
    c. Renters and share croppers,
    d. Corporations,
    e. Grazing associations,
    f. Project areas (conservation district-sponsored),
    g. Indian reservations, and
    h. Public utilities.

2. State of Montana

    a. Department of State Lands,
    b. Department of Fish and Game,
    c. Department of Natural Resources and Conservation,
    d. State cooperative grazing districts,
    e. Conservation districts,
    f. State experiment stations,
    g. Department of Health and Environmental Sciences,
    h. Department of Agriculture,
    i. Department of Livestock,
    j. Department of Community Affairs, and
    k. State Legislature.

3. Federal Land Management Agencies

    a. Forest Service,
    b. Bureau of Land Management,
    c. Bureau of Indian Affairs,
    d. National Park Service,
    e. Bureau of Reclamation,
    f. Fish and Wildlife Service,
    g. Agricultural Research Service,
    h. Army Corps of Engineers.

4. Other Federal Agencies

    a. Old West Regional Commission,
    b. Environmental Protection Agency,
    c. Office of Management and Budget, and
    d. Congress.

5. Educational and Technical Assistance

   a. Soil Conservation Service, U.S. Department of Agriculture,
   b. Cooperative Extension Service,
   c. Department of Animal and Range Science, Montana State University, and
   d. School of Forestry, University of Montana.

6. Financial

   a. Individual landowner/operator,
   b. Banks,
   c. Production Credit Association,
   d. Farmers Home Administration,
   e. Insurance company loans,
   f. Federal Land Bank,
   g. Great Plains (Soil Conservation Service),
   h. Agricultural Conservation Program (Agricultural Stabilization and Conservation Service),
   i. Small Business Administration, and
   j. Renewable Resource Loan Program (Department of Natural Resources Conservation).

7. Private Organizations

   a. Society for Range Management,
   b. Montana Association of Conservation Districts,
   c. Rural Area Development Committee,
   d. Agricultural Lenders' Range School,
   e. Montana Conservation Council,
   f. Montana Wildlife Federation,
   g. Rod and gun clubs,
   h. The Montana Stockgrowers Association, Incorporated,
   i. The Montana Woolgrowers Association,
   j. The Montana Cattlemen's Association International, and
   k. Others.

Private Landholder

Private landholders comprise the largest single category having responsibilities in rangeland management. They own 70% of the land area of Montana, which produces most of the forage for domestic livestock plus a large share of the forage for wildlife.

Private landholders are grouped into several subcategories based on their particular professions and locations. Those in the operator/owner subcategory work on, live on, and manage their lands directly. This usually results in good range condition, because the land can be improved most easily in the shortest period of time by these individuals.

In the absentee owners subcategory are those who hold title to the land and are legally responsible for its condition. However, they operate their holdings by the use of many types of agreements with renters. Generally, absentee owners are proud of their lands, but many times distance tends to obscure their vision in seeing problems as they occur.

In the renter and sharecropper subcategory are those whose primary concern is the cash crops from the land. This tends to direct their interest in the land away from development and protection toward production, because their occupancy is temporary. This condition does not generally create the interest in excellent range condition that is necessary for the highest quality management.

Corporate holdings in Montana are an important subcategory. These large corporations, in the past, often acquired their land for reasons other than forage production. Usually the acquisition was for possible mining, timber investment, or industrial uses. To these owners, the cash return from grazing is minor in comparison to the basic incomes of the organizations. On the other hand, corporations have been well informed regarding the importance of range condition and management and have completed some of the most outstanding examples of range development that have been accomplished to date.

Railroad lands are a particular category of corporate landholdings in Montana. Basically these lands were given to the railroads to enhance their development and to assist in financing the original construction of the rail lines. The railroad companies are endeavoring through trained range specialists to get proper management on these tracts, but the landlord-tenant arrangement gives them an absentee status that makes it difficult to gain rapid results.

State grazing associations are relatively new landholders. They are groups of ranchers who have formed an organization to purchase large areas of grazing lands. These associations have incorporated into their by-laws the provision that good range management is to be practiced at all times. This type of an arrangement is an example of recognition of the importance of good management, and the results of their efforts are apparent on nearly every unit.

Project areas of conservation districts can be established to carry out specific resource management and improvement proposals. Range renewal projects could be implemented through a project area approach.

Indian reservations own very large areas of the rangeland in Montana and have a major responsibility for improving management on the grasslands. Tribal councils and other organizations are working hard to get range improvement through proper management started and accepted on these lands. There is a good potential for increased production as these plans progress and educational programs are initiated.

State of Montana

Several departments and bureaus of state government have responsibilities for grazing lands. The following have been selected for discussion because they have lands under direct management.

The largest state land manager is the Department of State Lands, which is responsible for the school trust lands and other, smaller areas. The grazing lands are generally rented out under long-term leases to individual operators. Because the renters have applied all

degrees to management, range condition varies from poor to excellent. The State Lands Department is moving rapidly into management planning with some development. In the future good results can be expected on those tracts given concentrated attention.

The Department of Fish and Game has been steadily acquiring tracts of land that are important to both recreation and game management. These tracts are usually well managed and can be expected to improve in condition in the future. Population pressure on some of the areas which are used to gain access to streams and picnic sites will make it difficult to maintain a good condition range. Only special care can accomplish this task.

Two divisions of the Department of Natural Resources and Conservation have lands under direct management. Generally small tracts of land surrounding state-owned water projects are administered by the Water Resources Division, while all state-owned forest land is administered by the Forestry Division.

Responsibilities of the Forestry Division of the Department of Natural Resources and Conservation include both timber and grazing management, for the lands administered are generally in the form of grazeable timber lands. Grazing management is usually secondary to timber management; however, grazing management is being applied to these areas, and good results are evident. With improvement of condition on the rangelands over the entire state, the Forestry Division's responsibility for fire protection also becomes critical.

A discussion of the role of the Conservation Districts Division of the Department of Natural Resources and Conservation is presented on page 28.

Grazing districts are real pioneers in the management of grasslands and have made good progress over the years. Their position is one of extreme importance in the improvement of Montana's rangelands.

Conservation districts have a two-fold responsibility. The first is a direct responsibility to properly manage any grasslands that may be owned by the districts. Whenever a district acquires land, proper management is applied, not only for the benefits derived, but so the area can be used for demonstrational and educational purposes. The second responsibility is to properly manage, protect, and utilize the soil, water, and vegetative resources of the state.

The state experiment stations have areas of rangelands that are used to carry out research projects. As research is conducted, some lands may deteriorate in condition. This is necessary to gain knowledge which will benefit the total range management program. Generally the lands of the experiment stations are well managed and in an improving condition.

Some university lands are classified as rangeland. These are usually well managed and planned and are in either good or improving condition.

Institutional lands of the state are now mostly well planned and in an improving condition. A good example is the prison ranch, where excellent planning has been developed; the vast acreage of rangeland is in good to excellent condition.

It is a responsibility of the state agencies to plan proper range use and practice above average management on their lands.

Federal Land Management Agencies

Several federal agencies control approximately 30 percent of the land area in Montana. Thus, these agencies have a large responsibility to the rangelands that they administer and an equal obligation to the grazing lands that are affected by the various agencies' decisions and plans.

The Forest Service administers the largest area of federal lands in the state. As of September 30, 1976, 16,744,344 acres were administered by the Forest Service. Much of the national forest land is suitable for grazing. It supplies summer forage for many ranchers, plus habitat and forage for wildlife. Water production and recreation are primary responsibilities of these lands. The vegetative condition is generally good, and planning can be coordinated between private landowners and the Forest Service. The Resources Planning Act of 1974 calls for long range planning adequate to insure that Forest Service programs make appropriate contributions to meet the nation's future needs.

The Bureau of Land Management (BLM) is the agency designated to manage national resource lands under the Federal Land Policy and Land Management Act of 1976. As of January 1, 1977, there were 8,146,498 acres of BLM lands in Montana. The scattered and fragmented land pattern makes management difficult. In most cases the management plans developed are directly affected by intermingled private lands. These lands are also often quite fragile and easily damaged by grazing and other disturbances, thus adding to the difficulites of land management.

The Bureau of Indian Affairs (BIA) owns and manages approximately 125,000 acres. Its primary responsibility is one of advice and guidance to the reservations. The BIA has an indirect responsibility for 5,284,806 acres of tribal-owned trust and allotted rangelands on the different reservations.

The National Park Service has 1,013,598 acres of grazing land in Montana. These lands are intensively managed, but, due to the pressure of recreationists and their demands, it is difficult to keep these ranges in an improved condition. Game management and travel pattern controls are high priority items in National Parks.

The Bureau of Reclamation has about 162,000 acres of rangeland included in its total Montana acreage of 287,017. The Bureau is responsible for seeing that these rangelands are properly cared for and that good management planning is applied.

The Fish and Wildlife Service administers 937,166 acres of grazing land. These lands are managed and planned for improvement of the vegetative cover, watershed protection, and food and habitat for wildlife. In many instances the lands also provide summer forage for ranchers' livestock. The rangeland administered by this Bureau does have some recreation pressure, which makes management somewhat more difficult.

The Agricultural Research Service (ARS) is responsible for managing its own rangelands in the best and most scientific manner. This is being done, and its lands are in an improving condition. In addition, the ARS is responsible for carrying on research to help solve some of the many vexing problems confronting rangeland managers and owner/operators.

The Army Corps of Engineers is not primarily a grazing land manager. However, it controls more than one-half million acres in Montana, of which 47,164 are rangeland. Planning and management of these areas are receiving adequate attention at the present time.

Other Federal Agencies

Old West Regional Commission

The Old West Regional Commission is a federal-state partnership designed to solve regional economic problems and stimulate orderly economic growth in the states of Montana, Nebraska, North Dakota, South Dakota, and Wyoming. Established in 1972 under the Public Works and Economic Development Act of 1965, it is one of seven identical commissions throughout the country engaged in formulating and carrying out coordinated action plans for regional economic development.

The Old West Regional Commission authorized a two-year grant of $540,000 on April 1, 1975, to the Society for Range Management (see "Private Organizations" section) to implement a regional rangeland program. The program in the five Old West states was designed to provide (1) youth and adult education tools, (2) impetus for accelerating range management education, research, and extension activities, and (3) the necessary vehicle for gaining public recognition of the products and values of the region's rangelands. An advisory council, consisting of the following listed persons, was established.

OLD WEST REGIONAL RANGELAND PROGRAM
ADVISORY COUNCIL

Dennis Nathe, Chairman
John Hollenback
Harold Simmes
Richard Kurth
Peter V. Jackson III
Willie Milliron
O.M. (Ole) Ueland
Robert Ross
Carl Wambolt

Alternates:

Walt Steingruber
Robert Neumann
Emmett Butcher

One of the provisions in the grant called for compilation of existing range resource data. State Range Coordinators were charged with acquiring data from state and federal agencies, individuals, and organizations that have rangeland interests or responsibilities. It was recognized that a wealth of data on rangelands was available, but that the data were in scattered sources and had not been assimilated.

The Montana Rangeland Resource Program and the Old West Regional Rangeland Program have, through cooperative efforts, initiated action programs to achieve the long-term range improvement goals developed for Montana in the early 1970's. Continued cooperation between individuals, organizations, and all state and federal agencies involved with rangelands will help achieve maximum rangeland productivity in the last quarter of the century.

Environmental Protection Agency

The Environmental Protection Agency (EPA) is an independent regulatory agency created by Executive Order in 1970 to protect and enhance the environment through research, enforcement, and assistance to state and local governments. Its activities include control of air and water pollution, solid wastes, pesticides, radiation, and noise; the EPA's water quality responsibilities are particularly relevant, since a large portion of Montana's water resources originates on rangelands.

Educational and Technical Assistance

Technical assistance, particularly to the private landowner and/or operator, is vital to the management and improvement of Montana's rangeland resources. This assistance is also needed by the many land management agencies so that they may gain maximum results from their programs. With continued and increased efforts to improve the rangelands, technical assistance will also need to be expanded continuously.

The Soil Conservation Service (SCS) assists ranchers in developing and carrying out management plans that are based on the conservation needs of the individual ranch operations. The services are available upon request as staffing and workload will permit. The SCS, through conservation districts, has placed strong emphasis on vegetative practices. Its range management staff has been reinforced, and research is being accomplished at the Plant Materials Center in Bridger, Montana. At this center, various species of native plants are studied and developed to make better plants available for rangelands and for other conservation purposes.

The Cooperative Extension Service (CES) supplies technical assistance through a state, federal, and county cooperative program. The CES, through county agents and state specialists, plays a vital role in rangeland management programs. Its major service is education. Promoting range management to ranch operators, children in 4-H programs, and the urban people is an important part of the education process.

The State Extension Range Specialist has a large responsibility in getting ranchers to apply the latest management techniques and methods

developed by research. In the future this part of the Extension Service program will become more important. A program of particular importance, presently being conducted by the Extension Service, is the Ranchers' Range Schools, which should be expanded. Additional films and slide presentations are needed.

The 4-H range judging contests and projects are moving along very well, but here, again, a larger program would help in increasing the application of range management principles on the land.

The Montana State University Department of Animal and Range Science has produced invaluable research in grassland management, in addition to conducting its classes for range management graduates. The Department today is the nucleus of what will be needed in the future. Its present quality is to be praised, but its numbers will soon be far short of meeting the need for personnel trained in research and land management, and for skilled owner/operators, that will be required to meet the demands of our range management programs.

Financial

The largest single financial contributor to proper range management is the landowner. This group of range managers will need to consistently invest in necessary projects such as grazing systems, spraying, seeding, fencing, and water development on their individual units. Individually, these are not extremely expensive, and they will be incorporated into yearly budgets as regular cost items.

Stable livestock prices that will return a fair net profit will permit these necessary capital investments, which will in turn be reflected in improved condition of the rangeland and increased stability of the operation. However, ranchers must be cautioned not to establish carrying capacities during favorable years, but rather to allow rangelands to improve in condition so that, in periods of drought or low prices, the rangeland can support some overuse for short periods.

Major projects need special means of financing to spread the cost over several years. The generally accepted banking methods, such as commercial and private banks, Production Credit Associations, and the Farmers Home Administration, have a direct responsibility to supply credit to landowners in the medium range of financing over a short period of years. When the press from expanded rangeland development and improvement becomes greater, these financial institutions will need to give this type of loan a high priority; also, methods for making the transactions in the simplest manner need to be developed.

Long term loans for the complete revamping of a range project need to be handled by insurance loans and land banks. This type of loan should be available to the owner/operator as another tool to gain good management.

The U.S. Department of Agriculture's Great Plains Program supplies long term assistance, while its Agricultural Conservation Program provides cost-sharing on short term management practices. Additional money is needed in these programs to meet the demands for range and other types of development.

One of the more recent sources of agricultural financing is the Renewable Resources Development Program. Passed by the Montana Legislature, the act makes 2½% of the coal severance tax available under low-interest loans to finance the development of any renewable resource, which includes rangeland and other agricultural projects.

All these programs should be studied to determine changes needed to bring them up-to-date for the benefit of rangeland improvement efforts.

Private Organizations

Several private organizations are interested in rangelands either directly or indirectly.

The most important organization that is devoted strictly to rangelands is the Society for Range Management, which is a private, nonprofit, professional association dedicated to advancing a comprehensive understanding of range ecosystems and the intelligent use of all range resources. This worldwide group's membership is made up of range scientists, researchers, educators, land managers, and ranchers. Their goal is to advance the science and art of grazing land management. The organization assists all who work with rangelands to keep abreast of new findings and applications in range management and strives to create a public appreciation of the benefits to be derived from proper range use.

There are two sections of the Society for Range Management in Montana -- the International Mountain Section in western Montana, and the Northern Great Plains Section in the eastern part of the state. This society can supply a great deal of advice and counsel in such matters as broad area planning and education programs.

The Montana Association of Conservation Districts is a statewide organization comprised of 59 districts that work in all resource fields. Through their corporation, this group owns the Plant Materials Center in Bridger, Montana. This association sponsors range programs and conducts educational projects.

The Rural Area Development Committee (RAD) is a volunteer group of persons assisted by the Extension Service to promote rural development. As early as 1963, the Rural Area Development Committee recognized the many opportunities that existed for range improvement in Montana. Consequently, the Rural Area Development Committee established a Range Subcommittee and charged it to endeavor to accomplish the following purposes.

1. Increase awareness of range development potential and its beneficial effects on community and individual income,

2. Assist in obtaining and promoting the coordination of activities of private, state, and federal organizations in range resource development,

3. Encourage the development of educational programs showing the effect of grazing use, recreational use, and watershed use of private, state, and federal lands on community income, stabilization, and welfare,

4. Assist in determining the need for research in range resource development, and create an awareness of research needs, and

5. Assist local development groups in giving adequate attention to range resource development when preparing overall economic development plans and developing specific projects.

In 1969, the Hill County Soil Conservation District Supervisors proposed the preparation of a Montana rangeland resource plan. The RAD Range Subcommittee supported the proposal, and it was subsequently approved by the State Rural Area Development Executive Committee. The Montana Rangeland Resource Program as it exists today is largely a result of recommendations made by the State Rural Area Development Committee.

The RAD Range Subcommittee is active in the range education field. This group is strongly rancher-oriented and will be extremely important in promoting future management programs.

Because of the duplication of effort and membership, the Montana Rangeland Resource Advisory Committee and the State Rural Area Development Range Subcommittee were combined and now serve in an advisory capacity for both groups.

The Agricultural Lenders' Range School sponsored by the Montana Bankers Association holds an annual campout where specialists conduct a range school for 50 or more bankers. This very successful program should be broadened to more completely cover the entire state each year.

The Montana Conservation Council is made up of conservationists with a deep desire to improve the environment. Their work has been concentrated on legislative matters and youth activities. This group has great interest in anything that promotes a good range management program.

The Montana Wildlife Federation is a statewide sportsmen and conservationists group that is dedicated to conservation and an improved habitat for wildlife. Good range management is one of the practices that the federation promotes. The efforts of urban groups to seek improvement of the general condition of the rangelands will be valuable to the rancher and sportsman alike.

Rod and gun clubs are usually the local extension of the Wildlife Federation with similar interests and objectives. The membership of these groups usually includes many ranchers and farmers. Although hunting and fishing are their prime concerns, the general improvement of the land and cleanliness of the water are also of high priority in their work.

The Montana Stockgrowers Association is one of the oldest organizations in the state. Raising of livestock, use of public lands, and government controls are its high priority programs. This organization is one of the moving forces of the state and has had much to do with nearly every vegetative program that has been put into action. Being ranchers, the members are always vitally concerned with livestock forage. The membership today is taking a serious look at the many different uses of grazing

lands, such as recreation and wildlife habitat. There will be more participation by the stockgrowers in range management efforts in the future.

The Montana Woolgrowers Association is a very important organization in Montana. It has a history of progressive action on all matters of concern to that industry and the general public. While the sheep industry has decreased considerably in recent years, the association is still very influential, and the quality of its work is high. The programs of range management sponsored by the woolgrowers are very effective. Additional programs should be promoted by organizations such as this, the Montana Stockgrowers, and the Montana Cattlemen's organizations.

The Montana Cattlemen's Association is a relatively new organization in Montana. Its membership is also composed of stockmen who are primarily interested in good management. This group has good potential in all areas of ranch management.

A number of other private organizations, including the Grange, Farmers' Union, Farm Bureau, and National Farmers' Organization, have an interest in range management programs.

APPENDIX D

MONTANA RANGE LEADERS

AREA I

Conservation District	Name	Conservation District	Name
Daniels County	Robert Schneekloth	Fergus County	Emmet A. Butcher
Garfield County	Charles Pluhar	Judith Basin	Walt Johnson
Petroleum County	Earl Bassett	Phillips	Bill French
Froid and Culbertson-Bainville	Faye Crusch	Sheridan County	Dennis Nathe
Valley County	Dick Rohde		

AREA II

Carter County	John Teigen	Dawson County	Willie Milliron
Little Beaver	Robert Neumann	McCone	Jay Wright
Custer County	John McRae	Powder River	Darrel Hanson
Prairie County	Frank O'Neill	Richland County	Harold Tolksdorf
Wibaux	Leon Thrams		

AREA III

Big Sandy	Keith Edwards	Blaine County	James McCann
Cascade County	Alex Ferguson	Chouteau County	Dick Kurth
Glacier County	Glacier County Conservation District	Hill County	Walt Dion
Liberty County	Earl Thompson	Pondera County	Robert Layne
Teton	Gary Olson	Toole County	Harold Simmes

AREA IV

Big Horn	Larry Fox	Carbon County	Bill Skorupa
Lower Musselshell	Nick Schaff	Rosebud County	Joe Nansel
Stillwater	Lawrence Berry	Sweet Grass	Frank Cosgriff

AREA IV (Continued)

Conservation District	Name	Conservation District	Name
Treasure	Robert DeCock	Upper Musselshell	Paul Martin
Yellowstone	Clinton McFarland		

AREA V

Bitterroot	Stephen Vogt	Deer Lodge Valley	John Hollenback
Eastern Sanders	Ed Magera, Jr.	Flathead County	Gordon Conrad
Granite	Cy Corlett	Green Mountain	Don Naegeli
Lake County	LeRoy Morin	Lincoln	Edric Vrendenburg
Missoula & Mineral	Sidney Wills	North Powell	Paul Murphy

AREA VI

Beaverhead	Roy Cornell	Broadwater	Elvira Hahn
Gallatin	Robert Lane	Jefferson Valley	Walt Steingruber
Lewis & Clark Co.	Frank Thompson	Madison	Peter V. Jackson
Meagher County	Dean Thorson	Mile High	Paul Gneiting
Park	Bruce Malcolm	Ruby Valley	Mort Lott

APPENDIX E

CHECKLIST FOR RANGE LEADERS

County ACREAGE Private _____ State _____ USFS _____ BLM _____ Other _____	INVENTORY		PLANNED OBJECTIVES		EVALUATION	
	Units Completed at Beginning Of Year	Units Remaining To Be Completed	Current Year (19__)	Long Term (to 19__)	Planned Objectives Completed at End of Year	Total Cost
EDUCATION (number)						
Range Tours						
Workshops						
Planning Seminars						
Community Meetings						
Youth Camps						
News Media						
EROSION AND SEDIMENT CONTROL (acres)						
FENCING, CROSS (feet)						
FIRE CONTROL (acres)						
HIGHWAY AND ACCESS ROADS (miles)						
INSECT CONTROL (acres)						
MINING (acres)						
PROPER RANGE USE (acres)						
Reseeding						
Controlled Grazing						
RANCH UNITS-RANGE PLANS (number)						
RANGELAND CONVERTED (acres)						
Cropland						
Subdivision						
RECREATION						
Camping Areas (number)						
Hiking and Motorbike Trails (miles)						
Self-guided Tour Routes (miles)						
RODENT CONTROL (acres)						
SHELTERBELTS (feet)						
STOCKWATER DEVELOPMENT						
Wells (number)						
Troughs-Tanks (number)						
Pipelines (feet)						
Reservoirs (number)						
Springs (number)						
STREAM BANK PRESERVATION (miles)						
WEED CONTROL (acres)						
WILDLIFE IMPROVEMENT						
Fish Pond Stocking (number)						
Habitat Development (acres)						
OTHER						

SUGGESTIONS FOR ADMINISTERING THE MONTANA RANGELAND RESOURCES ACT

This form, when completed, will provide an inventory of the current situation, short- and long-term objectives, that year's accomplishments, and the expenses involved in improvements for each district -- information which is needed by range leaders, DNRC personnel, and cooperating agencies. Because the compiled district programs largely make up the state program, these inventories will also be valuable to the Advisory Council in making recommendations for administration of the Montana Rangeland Resource Program. To be most useful and effective, the inventories will have to be revised and updated frequently.

It may be desirable to have one of these forms filled out for each U.S. Geological Survey sub-drainage basin in concert with a soil conservation sediment control program. The same may be true concerning public lands.

Most items listed should be self-explanatory, but DNRC field representatives have the necessary definition and interpretation of each. DNRC personnel will work with range leaders and cooperating agencies in securing and compiling information for this form. Several agencies already have some of this type of information available.

It is recognized that not all items listed are applicable to each district. Space has been provided to include other items that a district may want to add. A red star should be put by the item(s) the range leader wants given the highest priority during that year.

NOTES:

APPENDIX F

SUGGESTED LANGUAGE FOR INCLUSION
IN LEASES AND CONTRACTS

Short Term Lease

The parties hereto mutually agree that the initial stocking rate of the leased premises is_____animal-unit months. For purposes of this agreement an animal unit (AU) is considered to be the equivalent of one mature cow with calf. An animal-unit month (AUM) is the amount of feed or forage required by one animal unit for one month. Lessee shall, during the term of this lease, keep accurate records of the animal-unit months of grazing on each area within the premises. Prior to December 31 of each year, the parties will make a grazing use analysis and review of management encompassing the entire premises with a qualified range consultant selected by mutual agreement of the parties. The stocking rate and a grazing plan for the subsequent year shall be based upon the use analysis and management review and implemented by the Lessee.

Long Term Lease

The parties hereto mutually agree that the initial stocking rate of the leased premises is_____animal-unit months. For purposes of this agreement an animal unit (AU) is considered to be the equivalent of one mature cow with calf. An animal-unit month (AUM) is the amount of feed or forage required by one animal unit for one month. The parties hereto shall through mutual agreement devise a management program designed and intended to maintain or improve the vegetative condition and soil resources of the said property during the term of this agreement. Lessee shall, during the term of the agreement, keep accurate records of the animal-unit months of grazing on each area within the premises. Prior to December 31 of each year, the parties will make a grazing use analysis and review of management encompassing the entire premises with a qualified range consultant selected by mutual agreement of the parties. The stocking rate and a grazing plan for the subsequent year shall be based upon the use analysis and management review and implemented by the Lessee.

Contract for Deed

The parties hereto mutually agree that the initial stocking rate of the leased premises is_____animal-unit months. For purposes of this agreement an animal unit (AU) is considered to be the equivalent of one mature cow with calf. An animal-unit month (AUM) is the amount of feed or forage required by one animal unit for one month. The parties hereto shall through mutual agreement devise a management program designed and intended to maintain or improve the vegetative condition and soil resources of the said property during the term of this agreement. Buyer shall, during the term of this agreement, keep accurate records of the animal-unit months of grazing on each area within the premises. Prior to December 31 of each year, the parties will make a grazing use analysis and review of management encompassing the entire premises with a qualified range consultant selected by mutual agreement of the parties. The stocking rate and a grazing plan for the subsequent year shall be based upon the use analysis and management review and implemented by the Buyer.

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